The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 502.---Vol. XV.] LONDON: SATURDAY, APRIL 5, 1845. [Price 6d.

MINING MATERIALS FOR SALE, IN CARNARVONSHIRE.—TO BE SOLD, BY AUCTION, without the least reserve, on Tuesday, the 8th day of April, 1845, at the hour of Eleven o'clock, at the Buckeley Mines, on Havodyporth lands, near Beddgelert, the whole of the MINING MATERIALS belonging to the BUCKELEY MINE COMPANY, consisting of a 22-feet WATER WHEEL, 3-feet breast; CRUSHING MILL, nearly new, with 24-inch rolls; stamps, with eight heads; about ten tons of T pattern rolled iron rails, sheet iron waggons, smiths' bellows, anvils, miners' tools, iron, timber, &c. 1

MINING MATERIALS FOR SALE,
BY HENRY BURGESS.

70-inch engine, complete
22-inch ditto ditto
3 Boilers, 7, 8, and 5 tons
Steam pipes, &c., complete
3 Wrought-iron tubes
3 Balance-bobs, complete
Gudgeon, straps, and bishops heads, various sizes
20 Cheek loops and swords for bobs
18 pairs main or outer connection caps, various sizes
30 cwt. cast joints
4 sets of iron work for V-bobs
50 cwt. bucket prongs and joints
80 cwt. flanch pins
60 cwt. rod pins
40 cwt. sundry bolts for whims, cisterns, &c.
T-Milliers and axles for whims
80 cwt. staples and glands
50 cwt. flat-rods
40 cwt. bucket-rods and joints
60 cwt. valve iron
6 3¼ and 3½-inch flat thread tops
2 sets screwing tools
4 Screwing stocks
12 and 10-inch capstan rope
5 Scale beams and stands
30, 36, 40, and 45-inch smiths' bellows
Smiths' vice
3 Anvils
2 Mandrills
Punching machine
5 Tram waggons
3 Kibble moulds
80 cwt. strapping plates, faggotted iron
90 cwt. strapping plates, common iron
Tram iron clipped, and tram saddles
5 pairs single, double, and treble blocks
Fall ropes for ditto
20 Capstan sheaves
2 Capstans
Oak caps for shears
Large air machine
Brass bell
2 Hand screws
1 pair drop screws
5 pairs yokes and hanging bends, faggoted
5 pairs bugles
2 Winches
Water whim and machinery, complete
Tin dressing sieves
Pump rings
Shaft rollers, 60 cwt.
Flat-rod rollers
Pumps, of 5, 6, 7, 8, 10, 12, 13, 15, 16, 17, 18, 19, and 20-inches diameter
Plunger poles, of 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, and 21-inch diam.
H-pieces, of 6, 8, 9, 11, 15, 16, 17, and 21 inches diameter
Working barrels, of 6, 7, 8, 9, 10, 11, 12, 13, and 15-inches diameter
Windbores, of 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16-inches diameter
Horse-whim kibbles
Horse-whim chain, ditto ropes
Flat-rope and rod sheaves
Horse whims, and a variety of other articles for mining purposes 2

The above materials having been purchased at a time when the prices of all descriptions of iron were extremely low, H. B. warrants to sell the same at a saving of from 20 to 30 per cent.

Application to be made to Mr. William Davey, at the yard adjoining the railway terminus, Camborne, or to Mr. Henry Burgess, Trengove, Camborne.
Dated April, 1845.

STAFFORDSHIRE.

COAL AND IRONSTONE MINES.—TO BE SOLD, BY AUCTION, in the month of MAY next, by Mr. CORBETT, auctioneer, Bilston, the valuable FREEHOLD ESTATE and COLLIERIES, situated at Darlaston-green, adjoining to the Birmingham Canal and the Grand Junction Railway, containing about sixty acres; and also the MINES and MINERALS under the same; together with the ENGINES, PITS, the very complete CEMENT-WORKS, FREESTONE QUARRY and MACHINERY thereon.

N.B.—The Birmingham Coal Company are now sinking a shaft to prove the Ironstone Mines, especially the Blue Flats, in the upper part of the estate—the lower part having already been sufficiently proved by the practical working of the same.

For further information apply to Mr. Rawlins, solicitor; Messrs. Tyndall and Son, solicitors; Mr. Lawrence, at the Birmingham Coal Company's Offices, all of Birmingham; Messrs. Cope and Son, mine agents, West Bromwich; or to the auctioneer, Bilston. 3

TO MINE AND SLATE QUARRY ADVENTURERS.—TO BE DISPOSED OF, BY PRIVATE TREATY, THREE-FOURTHS of the MINING INTEREST in the BENALLT MINERAL DISTRICT, CARNARVONSHIRE, adjoining the celebrated copper mines of Drws-y-Coed and Simdda-Dylluan. The lease extends over 640 acres of land, for the usual term of years, with 1-12th royalty. One of the many mineral lodes has been cut by an adit level, 110 yards long, at a considerable outlay; the course is three feet broad, intermixed with copper, mundic, black jack, and lead ores; another adit can be driven at another perpendicular depth of 200 feet, to cut the same course, if judged advisable. The adventurers, principally small tradesmen, in order to make an effectual trial, and to give a person of moderate capital the ruling part, offer the above shares at the nominal value of the outlay. The mines are situate seven miles from the shipping port of Carnarvon, and one mile from the railway leading thereto. Also a Blue Slate Quarry, situate 4½ miles from the above port, and on a range (at about two miles more westerly) of the immense slate vein of T. A. Smith, Esq.

Terms of the lease three lives and fifty-one concurrent years; the royalty only 1-9th of the net profits. Such favourable terms and opportunity has rarely occurred.

For particulars apply to Messrs. Jones and Hughes, Bangor Slate Wharf, Pimlico, London; Messrs. Jones and Prichard, Carnarvon, North Wales; or to Henry English, Esq., 5, Shorter's-court, Throgmorton-street, London. 4

VALUABLE LEAD MINE AND COLLIERY FOR SALE—The LEASE of the valuable LEAD MINE of FALLOWFIELD, near Hexham, in the county of Northumberland, with all the MACHINERY, and now raising a considerable quantity of ore. The establishment is very complete, with pumping, drawing, and crushing-engines, washing apparatus, smelt-mill, with two hearths and air-furnace, with every other requisite for carrying on the mine upon an extensive scale, and situated within two miles of the Newcastle and Carlisle Railroad. Also the LEASE of the FALLOWFIELD COLLIERY, adjoining the Lead Mine. The winning is nearly new, with an excellent seam of very fine coal, for which there is a considerable sale to Hexham and the neighbourhood.—For further particulars apply to Mr. Henry Smith, at Mr. Watson's office, High-bridge, Newcastle-upon-Tyne; or to Mr. John Henderson, at the mine. 5

COLLIERY TO BE LET (and may be entered upon immediately).—The LLAY HALL COLLIERY, adjoining the Gwersyllt Iron-Works, in the parish of Gresford, in the county of Denbigh, at a moderate royalty. The above affords a most eligible opportunity for investment of capital. The coal already worked consists of three strata of from 2 ft. 6 in. to 4 ft. in thickness, and it has been proved by borings that another vein of coal, 3½ ft. in thickness, exists below these strata. To the colliery is attached an excellent steam-engine, of 12-horse power, at the lower pit, and two gins at the upper pits, which may be fitted up at a trifling expense. The colliery is within a convenient distance of the Chester and North Wales Mineral Railway, four miles from Wrexham, eight miles from the city of Chester, and is surrounded by excellent turnpike roads. The tenant can be accommodated with several cottages for workmen.

Further particulars may be had from Mr. Williams, Glanywern, near Denbigh; and from Mr. Richard Barker, solicitor, Chester.—Chester, March, 1845. 6

TO CAPITALISTS AND MANUFACTURERS OF WHITE LEAD.—TO BE SOLD, BY PRIVATE CONTRACT, the whole of the FREEHOLD PREMISES and substantial BUILDINGS, occupying 1¼ acres of ground, and situated upon the edge of the Old Birmingham Canal, adapted to the manufacture of White Lead on a large scale, consisting of spacious and lofty carbonating, washing, and drying rooms; also paint mills, store rooms, litharge furnaces, laboratory, offices, and dwelling-house attached; smithy, stables, and extensive yard; with STEAM-POWER of 30-horse power—the whole of excellent construction and in complete repair.

These premises would be applicable to any manufactory requiring large and lofty rooms.
British White Lead Company, Birmingham, March 18, 1845. 7

BY THE KING'S ROYAL LETTERS PATENT.

IMPROVED COLLIERY BOW AND HOOK.—The PATENT IMPROVED COLLIERY BOW and HOOK effectually prevent the loss that frequently occurs in the falling and breaking of corves at the bottom of the shaft, and are complete safeguards to the pitmen in descending to, and ascending from, their work. Both are of very simple construction, and readily applicable for the purposes intended. The Hook is particularly calculated for sinking shafts, and where heavy and bulky materials are sent down and brought from the pits; it may also be employed to advantage in lead mines, as well as at cranes in warehouses and on board ship; it not only is perfectly secure, but it cannot foul or become obstructed by any projecting substance, or injure the combings of vessels delivering the cargoes, is used with the greatest facility, and when once hooked on cannot be accidentally disengaged. The Hook is also adapted for connecting waggons and carriages together on railways, as it can be speedily taken off, without loss of time. The Improved Bow is in use, and may be inspected at Gosforth, at the office of S. Reed (the patentee), Newcastle-upon-Tyne.

Licenses will be granted on liberal terms, by application to the patentee, if by letter, post-paid. Agents for the manufacture of the Bow and Hooks, Messrs. Elliott, Low Friar-street, Newcastle-upon-Tyne; and Messrs. D. and E. Bailey, 272, High Holborn, London.

Parties using the Improved Hooks and Bows without license will be liable to the consequences of infringing the Patent Right. 8

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.

References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London. 9

MINER WANTED, who is practically acquainted with the ENGLISH METHOD of MINING for COPPER and LEAD ORES, and willing to GO ABROAD, to a fine climate, within four days' journey of England. He must be an active man, competent to direct, and willing, personally, to assist in working a small mine as an experiment, which, if successful, the appointment would be good and permanent, and emolument increased.—Testimonials as to ability, trustworthiness, and general character, and the terms upon which a six months' certain engagement would be accepted, to be sent to "J. G.," Brook's Wharf, Upper Thames-street, London. Security may be required.—ONE or TWO ASSISTANT PRACTICAL MINERS will also be required, who can likewise address as above, with testimonials, terms, &c. 10

MANAGER WANTED FOR A MALLEABLE IRON-WORK.—The WEST OF SCOTLAND MALLEABLE IRON COMPANY will RECEIVE APPLICATIONS for the office of MANAGER till the 10th of April. He must not only be thoroughly qualified to superintend the iron making, but also the planning and construction of machinery and erections necessary for a Malleable Iron-Work.

Applications, accompanied by testimonials and references, to be lodged with Moncrieff, Paterson, and Forbes, writers, 45, West George-street, Glasgow.—March 5, 1845. 11

TO IRONMASTERS, &c.—WANTED, a SITUATION, by a PERSON well acquainted with the ERECTION of IRON-WORKS, from the blast-furnace to the finish bar, in every department, and on the most approved plan; can be well recommended by parties whom he has served for the last eighteen years. Security will be given if required.—Direct (pre-paid) to "A. B.," at the office of *The Mining Journal, Railway and Commercial Gazette*, 26, Fleet-street, London. 12

TO BE SOLD, OR LET ON LEASE, a MILL and FORGE, complete, capable of turning out 100 tons of iron per week; it is situated on the quay side, at WORKINGTON. Coal is plentiful and cheap, being got in the immediate neighbourhood, and the charge for transit to several good markets is moderate.
Apply to Mr. Ralph Clay, Workington, Cumberland. 13

TO CONTRACTORS FOR PUBLIC WORKS, AND OTHERS REQUIRING STEAM-POWER.—TO BE SOLD, TWO 20-horse power NON-CONDENSING ENGINES, cylinders 21 inches, stroke 3 feet; each engine has two cylindrical boilers, and four drums and gear for winding waggons up an incline.—Inquire of the resident engineer.—Docks, Southampton, April 2, 1845. 14

STEAM-ENGINES, from 8 to 16-horse power, ALWAYS in STOCK.—Apply to Mr. Capper, engineer and ironfounder, Birmingham.

Price.....£12 per horse.

N.B.—CASTINGS AND PIT WORK MADE TO ORDER. 15

IMPERIAL BRAZILIAN MINING ASSOCIATION, Winchester-house, Broad-street, London, 1st April, 1845.—Notice is hereby given, that the TRANSFER BOOKS will CLOSE on the 15th inst., and re-open on the day after the General Meeting in May, of which due notice will be given.

GEORGE THOMAS, Secretary. 16

BRAZILIAN COMPANY.—The directors having, under date the 27th ultimo, made a Call of One Pound per share on the Cata Branca shares, hereby give notice, that all shares on which the call may not be paid, on or before Thursday, the 10th of April, will be absolutely FORFEITED, agreeably to the conditions endorsed on the certificates.

Brazilian Company's office, 6, Broad-street-buildings, London, March 27. 17

CONSOLIDATED TRETOIL MINING COMPANY.
Mining Offices, 8, George-yard, Lombard-street, March 28.

The directors hereby give Notice, that the BUSINESS of this company will in future be conducted at THESE OFFICES, instead of at No. 6, St. Mildred's-court, Poultry; and they further give Notice, that all SUMS now DUE for CALLS and ARREARS must be PAID on or before the 12th April next, to Messrs. Williams, Deacon, and Co., bankers, Birchin-lane. 18

GWENNAP MINING DISTRICT.—The GEOLOGICAL MAP of this DISTRICT, containing all the Lodes, Boundaries of Setts, &c., by R. SYMONS, Land Surveyor, Truro, will appear in MAY.—Truro, April 2. 19

BUDGE'S MINER'S GUIDE IMPROVED.

In April will be published, 8vo., a New Edition, corrected throughout, and greatly improved, with Portrait,

THE PRACTICAL MINER'S GUIDE: comprising a Set of Trigonometrical Tables adapted to all the purposes of Oblique or Diagonal, Vertical, Horizontal, and Traverse Dialling; with their application to the Dial, Exercise of Drifts, Lodes, Slides, Levelling, Inaccessible Distances, Heights, &c. By J. BUDGE.
London: Longman, Brown, Green, and Longmans. 20

Just published, part I.,

COMBUSTION of COAL, CHEMICALLY & PRACTICALLY CONSIDERED. With coloured plates.
By CHARLES WYE WILLIAMS, Esq.
London: Simpkin, Marshall, & Co., and J. Weale—*Birmingham:* Wrightson & Webb. 21

A PATENT FOR SALE.—This PATENT is for an IMPROVED METHOD in the GENERATING of STEAM and the EVAPORATING of FLUIDS. Its most valuable properties are its rapid and almost instantaneous action—most astonishing saving in fuel—the total prevention of the boiler bursting, and the very material reduction in the weight of metal and space it occupies. It has the approbation of the most eminent engineers.—For particulars apply to Mark Barnard, Esq., solicitor, Southampton-street, Covent-garden. 22

PATENT GALVANISED IRON COMPANY.—A DIVIDEND, at the rate of 8 per cent. per annum, free of income tax, for the half-year ending the 31st of December, 1844, will be PAYABLE to the proprietors on and after the 25th of April inst.

At the Meeting, held at the company's offices, on the 31st of March, the following resolutions were unanimously passed:—

Resolved,—That the report of the directors and the accounts now submitted be received, adopted, and entered on the minutes.

Resolved,—That the dividend now declared be payable on and after the 25th of April.

Resolved,—That it is expedient to erect four additional furnaces and their appurtenances—viz.: three at Garth and one at Cefn Cwrt, and that the measures already taken for this purpose by the directors be approved, and they are hereby authorised to take all necessary measures for erecting and completing the said furnaces and appendages.

Resolved,—That it is expedient to increase the capital of the company to its full amount of £200,000 by the issue of the remaining shares.

Resolved,—That the best thanks of the meeting be given to the chairman and directors for their report, and for the great zeal and assiduity in conducting the affairs of this company to the present time.

Resolved,—That the thanks of the meeting be given to Messrs. Malins and Rawlinsons for the ability with which they have discharged the duties of managers of this company.

The report lies at the office for the inspection of such shareholders as were not present at the meeting.—3, Mansion-house-place, April 1, 1845. 23

THE PATENT GALVANISED IRON COMPANY beg leave to announce to the public, that they are prepared to SUPPLY ROOFING, SHIP SHEATHING and FASTENINGS, CHAINS, and the endless variety of articles to which iron, not subject to rust, may be applied.—Testimonials may be seen by application at the office, 3, Mansion House-place, London.

CAUTION.—THE PATENT GALVANISED IRON COMPANY having ascertained that certain PARTIES are INFRINGING THEIR PATENT by the MANUFACTURE and SALE of a SPURIOUS and COUNTERFEIT ARTICLE, to the injury of the company and the detriment of the public, hereby give NOTICE, that this COMPANY have the SOLE PRIVILEDGE of manufacturing and selling IRON COATED WITH ZINC, commonly called "Galvanised Iron," and that they will inflict the utmost PENALTIES of the law upon all PERSONS MANUFACTURING or SELLING the same without their authority, as well as upon all persons buying or using any Galvanised Iron not manufactured by them, or sold by their authority.

3, Mansion House-place, London, Jan. 24, 1845. 24

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Tuborne, Cornwall. 25

ANDREW SMITH'S PATENT WIRE ROPE, FOR MINING, RAILWAY, and SHIPPING PURPOSES.—The Royal yacht *VICTORIA AND ALBERT, PENELOPE, VIRAGO, HERMES*, and several other ships in the Royal Navy, as well as the Merchants' Service, have been FITTED WITH ANDREW SMITH'S PATENT WIRE ROPE; it is about half the size and weight of hempen rope and one-third cheaper.—For particulars apply to A. Smith, 69, Princes-street, Leicester-square; White Lion-court, Cornhill; or at the works, Millwall, Poplar, London 26

*** Certain parties having infringed the patent, it is only necessary to be observed, that measures have already been resorted to for the protection of the rights of the patentee, and that any parties not having a license from A. Smith will be held responsible.

EDMUND L. ELLIOTT and CO. beg to inform the PUBLIC, they have, for the GREATER FACILITY of transacting MINING BUSINESS, OPENED an OFFICE at TAVISTOCK, and hope to merit their support. They pledge themselves to fulfil all orders committed to their charge with the greatest promptitude.
Communications with London Brokers daily.
Bedford Hotel and Mine Brokers' Office, Tavistock, April 3, 1845. 27

RYE AND THOMAS, MINE AGENTS AND DEALERS IN STOCKS, RAILWAY AND OTHER SHARES,
80, *OLD BROAD-STREET, LONDON.* 28

ESTABLISHED 1834.

MR. W. FORDYCE, SHAREBROKER, 15, GREY-STREET, NEWCASTLE-ON-TYNE. 29

TO RAILWAY COMPANIES, &c.—WANTED, a SITUATION as an ENGINEER on a RAILWAY, to have the superintendence and care of the engines and railway, by a person fully competent, and who can be well recommended. Security will be given if required. Address to "Y. Z." (prepaid), at the office of *The Mining Journal, Railway and Commercial Gazette*, 26, Fleet-street, London. 30

TO RAILWAY DIRECTORS AND OTHERS.—The ADVERTISERS are prepared to ACCEPT A CONTRACT for TWENTY or THIRTY THOUSAND TONS of RAILS.—Communications to be addressed to "A. B.," Post-office, West Bromwich, Staffordshire. 31

RAILWAY WHEELS.—Two years' very extensive experience has demonstrated that T. BANKS'S PATENT MODE of RENEWING the WORKING SURFACE of WHEEL TIRES, with STEEL, effects a SAVING OF FIFTY PER CENT. of the expense of railway wheel tires above any other plan hitherto used.

For TERMS of LICENSE for England, Scotland, and Ireland, apply to
T. BANKS, ENGINEER, GERMAN-STREET, MANCHESTER.

The following firms have taken Licenses to Steel Wheels in their respective localities:—
Messrs. Robert Stephenson, and Co., engineers, Newcastle-on-Tyne.
" Swayne and Bovill, engineers, Millwall, Poplar, London.
" Kitson, Thompson, and Co., engineers, Leeds. 32

THE ELECTRIC TELEGRAPH.—COOKE AND WHEATSTONE PATENTEES.

The ELECTRIC TELEGRAPH has been adopted on the following LINES:—

By ORDER OF THE LORDS OF THE ADMIRALTY, on the South-Western Railway, as a GOVERNMENT TELEGRAPH from the ADMIRALTY, Whitehall, to PORTSMOUTH, above NINETY MILES.

On the same line, as a Commercial Telegraph from Nine Elms to the Port of Southampton, 77 miles---with a branch to Gosport, 15 miles.

On the London and Blackwall Railway.

Great Western Railway, from London to Slough, 18 miles---the Windsor Telegraph.

Yarmouth and Norwich Railway, a "Single Way," 20 miles.

London and Dover Railway, from Tunbridge to Maidstone, a "Single Way," 15 miles.

Part of the Oldham Branch Railway.

Part of the Leeds and Manchester Railway.

Part of the Edinburgh and Glasgow Railway.

The Dalkey (atmospheric) Branch of the Dublin and Kingstown Railway.

London and Birmingham Railway—viz., from Northampton to Peterborough—a "Single Line," 47 miles.

In addition to the above, the Telegraph is about to be laid down on several "single lines" in different parts of England, Scotland, and Ireland.

Mr. Cooke is prepared to grant licences for the use or erection of the Telegraph for entire districts of country, where the boundary can be accurately defined.

Mr. Cooke will also undertake to erect a Telegraph in any part of the United Kingdom for a fixed amount.

For further particulars apply to W. Fothergill Cooke, Esq., Kidbrooke, Blackheath; or to Robert Wilson, Esq., solicitor, 1, Copthall-buildings, London. 33

PACIFIC STEAM NAVIGATION COMPANY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the proprietors of this company will be HELD at the company's office, on Tuesday, the 6th day of May, at Twelve o'clock precisely, for the purpose of electing seven directors and two auditors, in the room of the present directors and auditors, who have resigned. The following gentlemen offer themselves as candidates for the direction:—

Frederick Beardman, Esq.	George Malcolm, Esq.
Capt. Octavius V. Harcourt, R.N.	William Bates, Esq.
Thomas Lyon, Esq.	James Tyrer, Esq.

John C. Jack, Esq. 34

And Notice is further given, that every proprietor intending to become a candidate, or to propose some other proprietor as a candidate, for the office of director or auditor, must, within fifteen days from the publication hereof, signify, by writing under his hand, to be left within the same fifteen days at the company's office, either his own intention to become a candidate, or the name and abode of the candidate intended to be proposed by him.

By order of the court,
Dated this 3d of April, 1845. WILLIAM TAGGART, Secretary.

STEAM TO INDIA VIA EGYPT, MALTA, ITALY, ALEXANDRIA, AND THE PENINSULAR PORTS.

PASSAGE TO BOMBAY, MADRAS, AND CALCUTTA.

The Peninsular and Oriental Steam Navigation Company's steam-ships

START FROM SOUTHAMPTON THE FIRST OF EVERY MONTH,

arriving at Alexandria about the 15th. The Hon. East India Company's steamers leave Suez for Bombay about the 22d of the month, and for Madras and Calcutta the Peninsular and Oriental Steam Navigation Company's steamers, *Hindoostan* and *Bentinck*, or Government steamer. The Peninsular and Oriental Steam Navigation Company have now a steam-tug on the Mahmoudeh Canal, and other great improvements have lately been introduced into the transit through Egypt. 35

STEAM TO MALTA, ITALY, &c.

A steamer from Southampton leaves the first of every month for Malta, whence are steamers to Naples, Genoa, Civeta Vecchia, three times a month.

STEAM TO OPORTO, VIGO, LISBON, CADIZ, AND GIBRALTAR.

A steamer leaves Southampton every Thursday at 3 p.m. for the above places.

Apply at the Peninsular and Oriental Steam Navigation Company's offices, 51, St. Mary Axe, London, where only passages can be secured throughout.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

SMART'S ELLIPTICAL CONVEX METALLIC FLOATS, FOR STEAM-SHIPS, as applied to the Bristol and Dublin steamer *SHAMROCK*, and to the *SWIFT*, between Newport and Bristol; and also to the *OSPREY*, running between Bristol and Waterford. The patentee has now the satisfaction to announce, that, in addition to the ships already named, he has granted a LICENSE to the Bristol General Steam Navigation Company to USE his PATENT FLOAT in all their steam-ships, comprising the Dublin, Cork, Waterford, and the various channel port steamers, varying in power from *forty* horses to *two hundred* each.

The numerous ADVANTAGES attending this valuable invention may be seen below:

1. The appearance of these floats is light and elegant.

2. Their durability and stability are indisputable, as may be instanced by the *Shamrock* steamer, which has been fitted with them for nearly twelve months, and has since steamed *twenty-five thousand miles*. The floats are now as firm and good as they were the first day.

3. Vibration is reduced so as to be scarcely perceptible; thus, the engines are eased, and both they and the ship suffer less wear and tear; and, from their peculiar form, they are strikingly advantageous in cases of strong head wind and heavy sea. Backwater and undulation is also reduced to its smallest quantum, and thereby lessening the chance of accident to small boats, barges, &c., which has hitherto been consequent on the operation of the common paddle-float, particularly in crowded rivers.

4. They more readily arrest the progress of a ship in chances of a collision, the concave side taking the water when this operation is performed. This is of great importance in preventing collisions, or backing off a shore.

5. They are very simple, and are easily applied to any paddle-wheel, at nearly the same cost as the common float, and THEY INCREASE THE SPEED MORE THAN ONE KNOT PER HOUR.

For license to use them (for which the charge is 10s. per horse-power), apply to the patentee, Mr. ROBERT SMART, 5, Grenville-place, Hotwells, Bristol, who will personally attend the fitting, if required, his travelling expenses being paid. 36

AGENTS.
Messrs. George Lunell and Co., engineers and shipbuilders, Bristol.
W. J. Le Feuvre, Esq., Southampton.
J. N. Smart, Esq., Swansea.
Thomas Mowatt, Esq., engineer, Leith, near Edinburgh.
Scott, Sinclair, and Co., Greenock.
W. H. Hutchinson, Esq., Hull.
J. R. Pim, Esq., Dublin and Liverpool.
Jukes, Coulson, and Co., 12, Clement's-lane, London.
*** Testimonials of the highest order, on application to the patentee or his agents.
Bristol, December, 1844

OFFICE FOR PATENTS, 7, STAPLE INN, HOLBORN.
J. MURDOCH (successor and late assistant to Mr. Hebert) informs INVENTORS and PATENTEES, that at his OFFICE they can obtain
REFERENCE TO A CLASSIFIED LIST OF PATENTS,
(THE ONLY ONE EXTANT), which shows at one view all the Patents ever granted for any particular object, whereby they may save much trouble and expense, and procure information not otherwise obtainable. BRITISH and FOREIGN PATENTS OBTAINED, and USEFUL and ORNAMENTAL DESIGNS REGISTERED.
SPECIFICATIONS carefully prepared, and REPORTS of INVENTIONS furnished on moderate terms.
FINISHED and WORKING DRAWINGS executed with promptitude and accuracy. 37

Transactions of Scientific Bodies.

MEETINGS IN THE ENSUING WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOUR.
Royal Asiatic	14, Grafton-street	Saturday	2 P.M.
Royal Entomological	17, Old Bond-street	Monday	8 P.M.
Chemical	Society of Arts, Adelphi	Monday	8 P.M.
Medical	Bolt-court, Fleet-street	Monday	8 P.M.
Medical and Chirurgical	53, Berners-street	Tuesday	8½ P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
Zoological	11, Hanover-square	Tuesday	8½ P.M.
Society of Arts	Adelphi	Wednesday	8 P.M.
London Institution	Finsbury-circus	Wednesday	7 P.M.
Graphic	Thatched-house Tavern	Wednesday	8 P.M.
Pharmaceutical	17, Bloomsbury-square	Wednesday	9 P.M.
Royal	Somerset House	Thursday	8½ P.M.
Antiquaries	Somerset House	Thursday	8 P.M.
Bl. Society of Literature	4, St. Martin's-place	Thursday	4 P.M.
Medico-Botanical	32, Sackville-street	Thursday	8 P.M.
Astronomical	Somerset House	Friday	3 P.M.
Royal Institution	Albemarle-street	Friday	8½ P.M.
Philological	49, Pall-mall	Friday	8 P.M.
Royal Botanic	Regent's-park	Saturday	4 P.M.
Mathematical	Crispin-street, Spitalfields	Saturday	8 P.M.

INSTITUTION OF CIVIL ENGINEERS.

APRIL 1.—THE PRESIDENT (Sir JOHN RENNIE) in the chair.

The paper read was by Mr. A. A. Croll, Assoc. Inst. C.E., "On the Construction and Use of Gas Meters." It first noticed the necessity for a means of accurately measuring the consumption of gas, in order that the honest consumer might not be obliged to pay for the frauds of the dishonest, as was actually the case at present, for the gas companies were obliged to charge such a price for their produce as should cover all contingencies. Then, after relating many flagrant instances of frauds on the gas companies, and the methods by which they were practised, the author attributed the loss of 30 per cent. of the gas produced, which was not accounted for in the consumption, rather to the fraudulent consumption than to the leakage, either from bad joints or through the pores of the iron pipes, as had been sought to be established in a former discussion. The author's own practical observations induced him to limit the amount of leakage to under 5 per cent. If, from the 2,700,000 cubic feet of gas which was distributed daily from the works of the Chartered Gas Company alone, there was a leakage of 30 per cent., 810,000 cubic feet of carburetted hydrogen gas would be let free daily in a comparatively limited district of the streets of London, which would render the atmosphere unbearable. This calculation was exclusive of the nine other large companies, whose pipes pervaded the other districts. The paper also contended that the theory of the decomposition of the gas in the earth was inadmissible, as, in that case, the hydrogen would be converted into water, and the carbon, which would amount to nearly 3000 tons annually, would be deposited in the soil. The author then described the water meter as invented by Clegg, and improved by Crossley, showing its defects and liability to be tampered with in dishonest hands, and the facility with which it could be made subservient to fraud. He then showed the various obsolete meters of the Dry Meter Company, and of Sullivan; and then explained the action of Defries's three-chambered meter, which has obtained such extensive employment—a good specimen of which, working very steadily, was on the table before the meeting. The paper closed with a description and illustration of Croll and Richards's dry meter, which, in the opinion of the author, possessed superior qualities, being more accurate in its measurement, on account of the chambers opening by the direct action of the discs; there being no action upon the diaphragm, and each chamber being completely filled and emptied at each interval.—In the discussion, these merits were contended for by the advocates of Croll and Richards's meters, while the partisans of Defries's meters, argued that his possessed every requisite quality, and that they had been in use for upwards of seven years, with increasing reputation. It was admitted that the use of the leather in both meters was objectionable, but hitherto no better material had been discovered, and the attention of the makers had chiefly been directed towards diminishing the extent of leather exposed to the action of the gas; that either of them were preferable to the water meter in its present state, and it was desirable both for the consumer and the gas maker that accurate meters should be used to prevent the present flagrant system of fraudulent measurement.

The following candidates were ballotted for, and elected:—Messrs. W. H. Barlow (as member), J. Scott, R. Lindles, J. Adams, and G. Berkley (as associates).—The following papers were announced to be read at the meeting of Tuesday, April 8:—"Account of the new Cast-iron Pier at Gravesend," by J. B. Redman, Grad. Inst. C.E.—"On the Corrosion of Metals," by R. Adie.

SOCIETY OF ARTS.

APRIL 2.—DR. ROGET, Sec. R.S. (Vice-President), in the chair.

The following gentlemen were elected as members:—W. H. Ashurst, H. T. Harrison, and E. Gibson, Esqs.—The secretary read a description of Mr. Riding's India machine for weaving silk goods, which consists of an adaptation of the cylinder of the Dobbin (with moveable instead of fixed pegs) to the wires of a Jacquard machine, doing away with the cards, covered pulleys, &c., of the Dobbin, and with the cards of the Jacquard machine.—Mr. Henry Lawson's reclinia for astronomical purposes was next described, which consists of a frame six feet long, having a foot bracket at bottom; the frame is suspended by two leather straps to a horizontal triangular frame, which rests on two large wheels and one small one; the large wheels are in such a position as to be under the control of a person using the reclinia; the small wheel is under the back part of the frame. A light chain, or cord, is connected with a pedal attached to the footboard, which cord leads to a catch, by which the position of a racked arch attached to the footboard is regulated, in order to set the inclined frame at any given angle; the inclined body frame is filled in with cane-work, as also the pillow frame which is attached to the former by means of springs. This observatory reclinia is especially useful when large telescopes are used, in which the sweep of the eye end, from the horizontal position of the tube to the zenith, or vertical position, forms an arc of several feet. When the observer wishes to remove his eye from the telescope, he has only to press down the spring pillow frame with his head, which can be done without injuring himself, or unadjusting the telescope. The machine above described is used by Mr. Lawson in his private observatory at Bath.

The model of a new fire escape and portable scaffold, by Mr. J. Clark, was next introduced to the meeting, which is an improvement on Mr. Wivell's fire escape, for which he was rewarded by the society in 1839. Mr. Clark's improvement consists—1st. In the mode of raising the upper ladder which runs between the sides of the larger ladder, thus giving firmness to the whole.—2d. In the facility of using the small ladder alone.—3d. In the introduction of a balcony instead of the canvass bag, which forms part of Mr. Wivell's escape.—4th. In attaching the carriage to the main ladder with a different arrangement of the springs, whereby the jerking motion of Mr. Wivell's contrivance is obviated—and, 5th. Its adaptation as a portable scaffold, either for the interior or exterior of lofty buildings.

ATMOSPHERIC RAILWAY.—The experiments by Lord Howick, Mr. Baring, Mr. Cubitt, and the gentlemen assisting the members of the select committee on the merits of the Atmospheric Railway, have been, we believe, satisfactorily concluded—that is, as satisfactorily as the formation of the committee could effect. In a former publication, we approved of the adoption of a committee, and anticipated the most valuable results, if *formed of men capable* of giving an *impartial* and elaborate report. We naturally expected, that the inventors, for their own sake, would have preferred the selection of such, so that their decision, whether favourable or otherwise, might have been entitled to confidence. But what has been the course pursued—a course as injurious to the interested parties as unsatisfactory, if not unfair, to the public? The committee was composed of members who had over and over again pronounced unmeasured approbation of the invention. Why, it was not a fortnight since that Lord Howick stated, in his place in the House of Commons, that he considered the atmospheric system as preferable to the present as the present is to the old slow coach system. Again, Mr. Cubitt, the engineer selected to advise them, has again and again publicly expressed his unmixed approval of the method. Now, do we object to the appointment of these gentlemen?—by no means; we have every confidence in their ability and integrity, but we think, that while Members notoriously favourable had been placed upon the committee, some who had expressed a contrary opinion might have also been included. Why was not Mr. Stephenson or Sir John Macneill selected to accompany the commission, and consult with Mr. Cubitt? Why were not several gentlemen fully as qualified as my Lord Howick or Mr. Baring named as coadjutors of the latter? Then, when, after the fullest investigation, and mutual discussion, a report issued from the joint committee, the fullest authority would have been attached to the document, the most implicit faith and ample satisfaction would have been evinced by the public in that really valuable and faithful decision. But, conducted as the investigation has been, what will be the result?—the measures of the committee will defeat themselves: the decision, of course unqualifiedly favourable, will be considered, and that justly, as partial and prejudged, and, as such, regarded with caution, if not contempt—and, in fact, become neither useful to the public as a medium of information, nor beneficial to the inventors as conclusive of their merits. This is the more to be regretted, as, in case of a judicious selection, the committee would have been invaluable, especially at the present moment, when the original system, as well as improvements and modifications on it, have excited universal attention, and the objections of some as stoutly resisted by the statistics of others. It was only on Friday last, that, at the annual meeting of the Dublin and Kingstown Railway, the most flattering encomiums were passed upon the successful working of the Kingstown and Dalkey line, which, it was stated, had not only proved productive to the company, but had established beyond dispute the merits of the invention. Others, again, are as loud in their condemnation, and between such conflicting opinions it was anticipated that a conclusive decision might have been drawn. We are sorry for the sake of science, and the public that these hopes have not been realised.

RAILWAY GAZETTE.

THE BOARD OF TRADE.

Why should not the decisions of the Board of Trade be treated with respect by the railway world at large, and sanctioned by the Government generally? These are questions which we have frequently asked ourselves, and, in spite of the anathemas thundered out by the various public papers—in too many instances mouth-pieces of discontented shareholders and disappointed companies—we ask the same question still. Although we do not consider the opinions of Lord Dalhousie and his colleagues to be infallible, or that the decisions springing from them are not to be controlled by a higher and more numerous body, yet we have every reason to believe that that body will, in a very great measure, be led in their movements by the arguments of a power which they themselves created. That the gentlemen of the honourable Board may frequently have acted in a way diametrically opposite to the public voice, though not to public opinion, we can readily understand, for, in how many instances, has private interest been the means by which the feelings of the community have been first awakened, and then governed: unfettered advice seldom springs from a private individual—some end he always has to answer; the good of his fellows must give way, in order that that *finale* may be obtained. It is well known what powerful weight the opinions of a wealthy man have in the markets; his single nod is capable of causing fluctuations, at once beneficial to himself, and ruinous to others. All this only proves to us how much more value ought to be set upon the decisions of the Board of Trade, than upon the diversified *on dits* that are floating about, especially as these decisions throughout have been marked by a vigour of capacity, and a knowledge of business which we little anticipated; and these backed, too, by opinions at once so clear and decisive, that they must carry conviction to every unprejudiced mind. Unguided by private interest—ungoverned by public clamour—they have ever pursued a steady Conservative course, which, though possibly founded originally on false grounds, still entitles them to respect, even from those who disagree; and we do not see why, when in the conscientious discharge of a most weighty responsibility, the Board feel it their duty to make a report, which must be in opposition to some parties, their motives and capabilities should be unceremoniously questioned by those they necessarily displease. In one breath we see unbounded praise for their adoption, and unqualified censure for their rejection, of some pet scheme, lavished by companies on the Board of Trade. Such undisguised selfishness, and the unfairness—not to say falseness—of such remarks, are at once disreputable, and too glaring to be concealed. The Board is doing its duty honestly, we will not say infallibly, for in one or two instances we have ourselves had occasion to point out discrepancies in their report; but, considering their arduous undertaking, comprehending, as it does, such vast conflicting interests, and the responsibility of selecting those most beneficial to the country, we think their conduct has displayed consummate talent and unflinching integrity, and, as such, meriting the respect, if not approbation, of the country. In some instances, when the Board of Trade has reported favourably upon a line of railway, it has been thrown out by the Committee on Standing Orders, but we do not think that a Government like ours will cancel a great and public good for the sake of a few quibbles, and it is the spirit, not the letter, of the Act that will be adhered to. The great opposition that is expected to the Direct Northern from the London and York, in Standing Orders, we look upon with little dread, for the Committee will certainly pay some attention from whence that opposition springs, and from *whom*; and truly do we imagine that the mighty London and York scheme will be crushed still more, if it turn against that tribunal which has already levelled it with the dust. Let it try—let it put into action all the engines which money can furnish—let all the means that disappointment can awaken, or envy dictate, be brought to bear—let it, with its equivocal character and disreputable policy, enter the field—it *will* be overthrown; and, although we shall not be sorry to see its intrigues eventually baffled, we should feel regret for those who have blindly supported it, and who must be crushed in its fall.

RAILWAY PROGRESS.

We are glad to observe that the different railway companies are gradually adopting those measures which the public has long required, for greater convenience and economy. Increased speed has already been effected on one or two of the main lines—the London and Birmingham invariably taking the lead; the Great Western at one time affected the same regard for public convenience, but its pertinacious retention of the disgraceful second and third class carriages, and its making the cheap its slowest train (though we should imagine that time was a far greater object to the poor man than the rich), has withdrawn from it, deservedly, all confidence, and rendered it obnoxious to the whole community. We believe that trains will shortly be started to perform the distance between London and Liverpool (204 miles) in six hours, being at the rate of thirty-four miles an hour; this certainly evinces enterprise, and a wish to consult the interests of the public, at once gratifying and creditable; all we trust is, that this benefit will not only be accorded to first class passengers (to whom, though a convenience, it is not a necessity), but extended to those by whom it will most be prized. The Brighton also runs at greater speed than originally; and the London and Birmingham propose shortly to accomplish the journey between the metropolis and Birmingham in three hours. The Grand Junction, too, in consequence of their increased receipts, have suggested to this company to make a further large reduction in their passenger fares, and not only has this recommendation been accepted, but the change will take place immediately on the increased speed coming into operation. Considering the great importance these undertakings have attained, and the vast resources they derive annually from the community, we trust to see such improvements more effectually and universally adopted. Yearly the companies assume greater consequence; railway communication is progressing rapidly through the entire country, and it only requires a little perception for themselves, as well as consideration for the public, to elicit the permanent support of the community, and thus secure at once their own and the national interests. During the week ending Saturday last, the increase of traffic in the under-mentioned twenty-one railways, compared with that of the corresponding week in the previous year, has amounted to 108,818*l.*—viz.:

Chester and Birkenhead	£1008	London and South-Western	1371
Eastern Counties	4322	Manchester and Birmingham	6399
Edinburgh and Glasgow	3260	Manchester, Bolton, and Bury	1320
Glasgow and Greenock	436	Midland Company	19025
Glasgow, Paisley, and Ayr	3145	Newcastle and Carlisle	2054
Grand Junction	10618	North Union	3690
Great North of England	3365	Preston and Wyre	1531
Great Western	25645	Sheffield and Manchester	1836
Liverpool and Manchester	7648	Ulster	108
London and Brighton	5163	York and North Midland	4994
London and Croydon	1880		

MONMOUTHSHIRE CANAL COMPANY AND THE NEWPORT AND PONTYPOOL RAILWAY.

Some time about the year 1792 a company obtained a charter by Act of Parliament, to construct certain canals and roads through the mineral districts of Monmouthshire, all which roads were made to terminate in a focus at Newport, an excellent harbour on the river Usk. At the time referred to, Newport was but a small village, with a population of only a few hundred souls. The little iron made and coals gotten in the surrounding districts, was conveyed for shipment on mules' backs, and one or two small smacks, sailing weekly to Bristol, sufficed for the trade of the place. The mountains around abounded with game, and the wild grouse was rarely disturbed in its haunt, and scarce knew the fear of man. At that time a mania existed, and spread through England, for the construction of canals, fully equal to the present excitement for railways. The Monmouthshire Canal was commenced, but, after a series of pecuniary and other difficulties, was almost suspended—constructed at a great expense for that time, opening a new district, and, when complete, almost without trade; the shares falling to a third of the first cost. A few bold spirits, however, still held the helm, and determined to weather the storm; amongst these rank almost first one of the celebrated Wegdwood's family, founders of the modern Etruria. These firm men were not disappointed in their calculation; every year brought more capital into the country, and increased the trade of their lines, till at last the once-despised canal shares have been held as a safe and desirable investment, at a premium of 120 per cent. on the first cost. The port of Newport now contains 15,000 inhabitants, splendid docks, and her exports far exceed in tonnage that of Bristol—the once-boasted queen of the west. The mountains in the northern district, the only part yet opened extensively, are one scene of bustle and activity; steam-engines labouring with resistless force, and the whole horizon in one continued blaze with the volumes of flame emitted from the furnaces and forges covering the country. The increasing improvements in the system of railways, and consequent diminution in the cost of transit, have, however, at length brought other districts into competition with this; and, within the past few years, a spirit of general dissatisfaction has influenced the traders on the lines of the Monmouthshire Canal Company. More than one attempt has been made to establish a line to compete with the old company in some single parts of the district, and, urged by the fear of an opposing line (the Newport and Nantyglo Railway), revived a few months ago, the directors of the Monmouthshire Canal Company promised, on withdrawal of the opposition bill, to give every facility to the traders, improve their lines, and construct a railway from Newport to Pontypool, and the adjacent works—having arranged to procure, by Act of Parliament, in the ensuing session, powers to carry out such works, to raise a further capital of about 119,000*l.* in shares, or by further mortgage on their works. The traders of the district, finding that a high maximum rate of tonnage is intended to be introduced into the last-mentioned bill, have determined on opposition. On Tuesday and Wednesday last, meetings were held at the British Hotel, Cockspur-street, at which were present, Joseph Bailey, Esq., M.P., R. J. Blewitt, Esq., M.P., Thomas Brown, Esq., and numerous other gentlemen, representing nearly every iron-work and colliery in the district. After deliberate consultation, it was resolved, that "the increasing trade of the mineral districts of Monmouthshire requires further accommodation for conveyance of the products of the mines to market; that in consequence of the high rate of tonnages, and bad construction of the roads, other ports are seriously competing with and injuring its trade, and the meeting pledge themselves not to rest satisfied till they are placed, as respects railway accommodation, on equal terms with other manufacturing districts." This resolve, of course, leads to an opposition to the present bill in the House, from the Monmouthshire Canal Company. We are not prepared at present to enter fully into the merits of the case; but it does not seem right that trade, in which capital of not less than five millions sterling is employed, should be crippled and restrained by a monopoly, where not much more than one-twentieth the like sum is at stake. It is hoped the Monmouthshire Canal Company will, by timely concession, give, as a favour, the fair terms, and save the pain of having enforced upon them measures necessary for the public good.

We think we may state with certainty, that the Government is actively engaged in completing arrangements that will materially concern Ireland, more especially in the introduction of railways there. Foreseeing the danger which must inevitably follow an indiscriminate adoption of such projects, and the ruinous consequences which reckless speculation, or a re-action, would entail, it intends to form a commission, which shall, by its strict investigation and requirements, at once prevent the possibility of equivocal designs, and limit their furtherance to such undertakings as will prove indisputably beneficial to the country. It will derogate the right, not only of passively recommending, but actively promoting, such enterprises as it deems advisable—while it will discountenance, with equal pertinacity, any schemes whose objects are problematical. At present, we are not prepared to speak more in detail, as it would be obviously premature to publish statements which might only serve to impede the Government in its measures.

We perceive, by the French papers, that a company is in course of formation which will soon apply for authority to execute a railway from St. Quentin to the borders of Belgium, passing by the towns of Origny, St. Benoite, Etreux, Landrecies, Maubeuge, and Jeumont. The survey of the road has been already made, and will in a few days be laid before the Minister of Public Works. M. Kysaens Junior and Co. are the bankers, and who are prepared to receive subscriptions.

CALEDONIAN RAILWAY.—We are credibly informed, that this railway company is about to bring before the public an important project connected with their line, which will embrace the greater portion of the breadth of Scotland, from Berwick to Ayr, and will intersect the Caledonian line at the point near Lanark, where the Edinburgh, Glasgow, and northern branches diverge. This important step is in compliance with the suggestions of the Board of Trade, and it is probable the prospectus will be published in our paper next week.

SAMBRE AND MEUSE RAILWAY.—In execution of the law of the 7th March, the final convention between the Government and the directors of the above company has been within the last week officially promulgated. The document is very voluminous, extending over no less than sixty-one articles, all of which, however, are extremely fair, and prove both parties to have been actuated with a mutual desire to accommodate, and avoid all meddling or vexatious conditions

DUFFRYN LLYNVI AND PORTH CAWL RAILWAY COMPANY.—This company is progressing most satisfactorily, and promises to fulfil the most sanguine anticipations entertained of its ultimate success. We understand, that the resources of the company are such as to admit of a dividend of 8 per cent. being declared at the next annual meeting in June—*i. e.*, 4*l.* 10*s.* upon the half-year from last October to May next, 3*l.* 10*s.* having been already paid upon the first half-year for 30th April to 1st November, 1844. These gratifying prospects are not confined to the benefit of the company, but the public will participate; for the former have determined to avail themselves of the privilege conferred by the Act of Parliament, to lower their rates of traffic when the dividend attains 8*l.* per cent; a very considerable reduction in this particular will most probably take place on the completion of the road with the new rails, and the port dues will positively be lowered one-half.

DURHAM AND SUNDERLAND RAILWAY.—At a meeting of this company, on Friday, the 28th ult., the chairman (Mr. C. Bramwell) stated that, during the last half-year, the company had carried 2000 chaldrons of coals more than in the corresponding period of 1843; and, notwithstanding the competition of the Newcastle and Darlington line, they had conveyed 10,000 more passengers during the same period. The expenditure of the working department had been 12,535*l.*, besides the interest on bonds, mortgages, &c. The receipts had been, from the leading of 77,883 chaldrons of coals, 15,178*l.*; the conveyance of 91,187 passengers and parcels, 2932*l.*—making, with other items, a total income of 19,383*l.*, which, after the whole expenditure of 16,480*l.* had been deducted, left a balance of 2903*l.* in favour of the company. A dividend of 10*s.* per share was declared, and a great reduction was mentioned to have been effected in the various debts of the company.—In the course of the meeting, it was stated that the new colliery of Croxdale, the property of Mr. Andrew White, would in a few weeks send its coal down the line, and that an extensive coal-field was now being explored by some gentlemen in Sunderland, and it was anticipated that a great quantity of coal would be brought on the line to Durham for shipment.

SHREWSBURY AND BIRMINGHAM RAILWAY.—A general meeting of the scrip holders in this project held a meeting at the London Coffee-house, Ludgate-hill, on Wednesday, the 2d inst.—The chair was taken by Mr. J. ANDREWS, when a report of the committee of inquiry was read; it was to the effect that they had discovered that out of the committee of ninety-one members, sixty-seven of them held no shares whatever in the company, and twenty-four only had invested money in the speculation, to the trifling extent of ten, five, and some of only two shares—of the committee of management five only held shares in the company. The tendency of the report was to charge the directors with general neglect and incapacity, and likewise the officials of the company, and, therefore, the committee of inquiry recommended the proprietors to insist on the resignation of these dignitaries, as unworthy of their confidence. A long and personal discussion took place before the report was adopted, in which some attributed the ill-success of the bill to the machinations of the Grand Junction Company; and others to the bad management on the part of the directors—the result was the passing of a vote of censure on the committee of management, and requesting their resignation, for having forfeited the confidence of the scripholders.—A resolution was also passed, giving to the present committee of inquiry the power of representing the scripholders, and of calling for the resignation of the directors.—The resolutions were carried amidst great discontent and confusion; after which a vote of thanks was passed to the chairman, and so closed the proceedings, which lasted several hours.

CARLOW AND KILKENNY RAILWAY.—A meeting of the shareholders took place at the London Tavern, on Thursday last. On Mr. Bainbridge being appointed to the chair, Mr. Smith, the secretary, said, they had met for the purpose of taking measures to form a railway between Carlow and Kilkenny. The Board of Trade had spoken in favour of a line in that direction. He was authorised to say, that if they made a line in this direction their right to the property would be respected, for the feeling of the landed proprietors was in favour of the line, amongst whom he could mention Col. Bruen, Sir Thomas Butler, Mr. Keelford, and others, and the total of the shares of the assenting shareholders in the Great Leinster and Munster Company was already 807. With a view to carry out this object, it was necessary that they should amalgamate with the Great Southern, the Carlow and Wexford, or the Kilkenny and Waterford. From the great friendliness shown by the Carlow and Wexford, and the advantages of their line, he should advise an alliance with that company in preference. Sir John Macneill had reported on the facility of making the line now proposed from the level nature of the country, and estimated the cost of its construction at 200,000*l.*; and, from the great traffic in lime and other articles, a return of 10 per cent. at least was anticipated.—After some considerable discussion, in which Mr. Shaw, Mr. Stewart, Mr. Wilson, and others, took part, a resolution was passed to the effect of agreeing to the Carlow and Kilkenny line, and to a committee being appointed to confer with the Carlow and Wexford Company, and to report to another meeting. One-half of the capital would be offered to the Great Leinster and Munster registered shareholders, and for the remaining a preference would be given to the Wexford and Carlow Railway proprietors.—A vote of thanks was then passed to the chairman, and the meeting adjourned to the 19th inst.

LONDON AND WINDSOR RAILWAY.—The object of this line is to connect Kensington, Hammersmith, Chiswick, Turnham Green, Kew, Brentford, Isleworth, Hounslow, Hanworth, Bedfont, Stanwell, Colnbrook, Eton, and Windsor, extending over a distance of twenty miles—commencing at Windsor, and terminating at Pimlico. The estimated profit is 78,328*l.*, and the working expenses 31,430*l.*—giving a net annual profit of 46,898*l.*, or a dividend of 9 per cent. There is, perhaps, no instance to be found of a line of railway combining so populous a district, with, at the same time, so level, open, and favourable a route for the construction of a railway.

Original Correspondence.

VICTORIA IRON-WORKS.

SIR,—I am given to understand that the Victoria Iron-Works are still in the hands of the Monmouth and Glamorganshire Banking Company—that they cannot dispose of them, or will not, at any reasonable rate—that the directors are actually carrying on the works themselves on our account as shareholders; and thus we are adding to our trade as bankers that of ironmasters. Is this consistent with the terms of our Deed of Settlement? Are we to be compelled, by the caprice of a few directors, to risk our all in one of the most notoriously speculative manufactures of this country? I do not mean to impugn the talent or well-meant judgment of the directors; all *may* turn out well, and our iron-works *may* yield us a good dividend, in addition to that of the bank. I, however, deny the right of the directors, however profitable and lucrative the prospect of the undertaking may appear, to divert the capital of the bank in any way from its legitimate channels. At the same time, I would remind my fellow-shareholders, that in 1837 and 1838 the price of iron was fully as high, and the prospect of the trade as fair, as at present—that since then, in a few short years, some of the oldest and most extensive firms in the trade have been totally ruined—that the failures and want of success of joint-stock companies in the iron trade is notorious, nearly all having sustained ruinous losses. Nothing can compensate in an iron-work for want of practical knowledge and devoted and constant attention from the proprietors; it is, indeed, now, after repeated experiments, generally admitted, that the manufacture of iron is not a legitimate object for joint-stock companies. As a serious lesson, you will, no doubt, remember, that one of the oldest, most respectable, and wealthy, of the banks in the midland counties, during the late mania in the iron trade, entered on nearly the same course as we are now doing, and with fully as bright prospects, and, perhaps, greater prudence and capital. Since then we have seen, with painful anxiety and sympathy, their names in the *Gazette*. Cannot, or will not, the shareholders of the Monmouth and Glamorgan Bank take warning by the misfortune of others, and be "up and doing," lest the same fate await them.

April 3. A SHAREHOLDER.

JOINT-STOCK IRON COMPANIES—VICTORIA IRON-WORKS.

SIR,—Observing the remarks of some correspondents in your late papers on joint-stock iron companies, &c., and being myself occasionally afflicted with that most incurable of diseases, *cacoethes scribendi*, I cannot refrain from offering a few observations thereon, which will, I trust, be considered an apology for my occupying a portion of your invaluable paper this week. Condemning, as I do most heartily, the system above alluded to, and for the purpose of illustrating my argument, and exemplifying my reasons, I shall make my comments on that *overmuch-puffed* Victoria Iron-Works, Monmouthshire—the once visionary "El Dorado" of by-gone *iron-mad* speculators—which I find is about to be *re*-puffed into existence; not, I predict, Phœnix-like, to rise out of its own ashes in renovated splendour, but like a *puff* flung us to perish in oblivious insignificancy; its hitherto short and lingering career was ushered in by puffs, direct and indirect, and continued with unabated vigour, until, like the flickering spark of an expiring taper, it vanished in *smoke*. Believing joint-stock iron companies generally to be injurious to those connected therewith, and also to the country where their establishments may be situated a curse, I consider I cannot do better towards unveiling this precious system of *humbug* than by selecting Victoria Works as an example, and giving some outlines of its history, the which are known to me in detail, from its state in embryo to the present day, its merits and demerits, its mineral resources, and its prospects, past, present, and future. (Some may exclaim, "what egotism!" be it so, my statements shall be facts.) After the outlay of many hundreds of thousands of pounds in winning and opening their mineral produce, and erecting a few blast furnaces, &c., a person would naturally infer that in these enlightened days the same was expended in the most judicious, prudent, and scientific manner; but no, Sir, I will here assert, fearless of contradiction, that never yet has so ample a capital been so foolishly and extravagantly frittered away. The whole of their minerals lie deep below the surface, at the bottom of Victoria Valley, and are won by a series of pits sunk as near to each other as practicable on the *extreme* limits of their boundary, which, also, is the *extreme* basset, or rise, of the strata in their taking (*i. e.*, the northern boundary)—thus, to any intelligent person, demonstrating at a glance, that nearly the whole of their mineral property is as yet not won, lying to the dip of the present range of workings, and, as a consequence, undrained, exhibiting gross ignorance on the part of those authorised to fix on the site of operations; to make use of a puerile, but rather appropriate, simile, "on this string of pits I look as on a child's bauble necklace, seemingly pretty, but intrinsically valueless"—being, in reality, of no practical utility as they are situated, unless for the purpose of working the contiguous properties to the rise, which I believe are in the hands of other ironmasters. I must not be considered as condemning that portion of the taking wholesale (which is, in fact, as yet maiden and unproved)—but, on the other hand, I merely have to do with the Victoria Works and Company in "the past and present tense," for the sole purpose of strengthening my arguments against the system I herein contend with. Touching the once much-vaunted benefits to accrue to the neighbourhood by the establishment of Victoria Works, a gentleman tritely observed to me lately, "all we know is this, a few furnaces were blown in and blown out again"—thus, instead of a boon conferred, it has been the bane of hundreds, prostrating their sanguine hopes, and entirely annihilating their prospects of success; when results so unfortuitous as these occur, and so palpably evident, the causes thereof should not be passed over in silence, and the sufferers ought to feel a duty imperative on them to make their information on the subject public. I, however, feel it incumbent on me so to do, for the purpose of making my countrymen aware that joint-stock iron companies generally terminate in "humbug." Some of the causes of failure at Victoria are notorious, and to a few I shall have cause to advert. All power was delegated by the shareholders to a board of directors, who, to my knowledge, were men of rigid honour and strict integrity, and, in the language of "Bath," might aptly be termed "cognoscenti," as far as they were individually interested; but, as a collective body, they could not be so termed in our mining and ironmaking language, as the result has shown. This incongruous board was generally composed of gentlemen holding high positions in society, and, I doubt not, merited such by their talents, but the idea of seeing in the city of Bath, quarterly, a number of officers in the army, barristers and doctors of law, clergymen, attornies, and retired tradesmen, gravely discussing important matters appertaining to collieries, mines, furnaces, mills, &c., in Wales—indeed, to my certain knowledge, some of the directors who suffered more severely from the infatuated disease, "iron mania," began soon to conceive themselves, in *lingua vulgo*, up to all the moves of mining and ironmaking—indeed, so much insight had some of them gained into matters, that they eventually appointed one of their body to reside at the works for three months at a time, as first fiddle and prime managing director, and, when the period expired, another to take it, and so on in rotation; some of them I knew; one was a retired mercer—another a dignitary of the church, who spent a great part of his valuable time in the smithy, and he once assured me he was a tolerable proficient at the anvil—then came an officer in the army, who applied himself so diligently to his duties, that he became a permanent resident, and I confess he deserved some credit for his pains. A member of the first board wasappointed at the commencement resident directing engineer of all operations above and beneath the surface; this gentleman was undoubtedly clever in his profession of a civil engineer—but you well know, Mr. Editor, a fish is not amphibious, and, according to my notion of things, constructing bridges, harbours, and railroads, in the west of England, is not the best method of studying the geology of the South Wales coal-field, or the manufacture of iron. The day of the coronation of our glorious Queen, one of the Victoria pits was sunk into the rider which lies between the Black Pins Mine and the Ell Vein coal, which proved about a foot thicker than its usual course; it was dubbed immediately some pompous name, and the provincial papers teemed with puffs direct, predicting from such indications that the whole of the seams of coal beneath became in the same ratio thicker, and all Victoria *geese* became instantaneously *swans*—but a few weeks dispelled the charm; the vein of coal was struck absolutely thinner than at the adjoining works to the rise (showing clearly that it would still become decreased to their dip)—thus, the *swans* became *geese* again! The finale of this concern is to be deplored; the whole of the machinery and moveables, which (together with the openings, pits, and erections) cost between 300,000*l.* and 400,000*l.*, were taken in execution for a debt of 16,000*l.* (in the gross) due to the Monmouthshire Banking Company. The shareholders' eyes became opened when too late to retrieve, and, calling to mind the Hudibrastic distich—

"Great are the perils that environ,
The man that meddles with *hot* iron,"

wiped their hands of the whole. The Abercarne and Newport departments, which cost the company originally about 70,000*l.*, barely fetched at the sale 3000*l.*, leaving Victoria in the hands of the bankers, who I know have, in more instances than this, "paid dear for their whistle," and their talons burnt for their temerity in dabbling in colliery and iron matters. For grasping, merciless, bodies of men, *I* have no sympathy, and for such I would not wish a greater punishment than the enjoyment of their prey. I believe the unprejudiced mind will, on perusal of the foregoing, unite with me in reprobating this humbug system of joint-stock iron companies; or, if not, I will take pen in hand, and describe some others that have become defunct, and the causes of their becoming so—but who could describe the late British Iron Company better than they have done themselves; a mere allusion to the latter is sufficient. NOT THE WITCH OF ENDOR.

Cardiff, April 1.

REAL DEL MONTE AND BOLANOS MINING COMPANIES.

SIR,—To make any kind of observation on Col. Vachel's reply (with which he is so perfectly satisfied), who has positively stated that he will not be drawn into any further correspondence, appears almost useless; but I am not one to take up a matter without carrying it through. This Colonel appears to have a very accommodating memory, which requires my assistance, in showing his discrepancies. I never stated in my circular, or elsewhere, that I intended to submit any motion and make any observation respecting it at the last general meeting. I did not solicit a single person to be present. It was a large meeting, and I have no hesitation in saying it was a *packed* one. Was the gallant Colonel one of the party? I stated the replies received to my circular were 143, and not 167. I wish to take umbrage under no word nor person; my conduct has been open, and shall continue to be so. The gallant Colonel seems to make light of the word "insult." I repeat, what I told him to his face, that a military man should be the last man to make use of the word—much less write it; for if he does, *malgré lui*, he may not only be drawn into a correspondence, but have more than one of his senses of feeling brought into action. The Colonel's apology never alluded to the word "insult," but was general—viz.: "I regret that any expression in my letter to Mr. Tyrrell should have given offence." Perhaps it is not convenient for the gallant Colonel to remember his own words—as again, in his conversation with me after the meeting, he observed, I had anticipated him in reading his letter; to which I replied, "Did I?" "But," continues the Colonel, "I approve of your propositions." "Then," said I, "how do you account for the course you have taken?" Upon which the gallant Colonel returned into the room, and soon found himself amongst those who would not reproach him. I never insinuated the Chairman dictated the Colonel's reply, or was an annonymous writer. There are clerks, as well as directors. He assures me it was his own composition, and that he was not likely to be made a cat's paw by any director. How many years has the gallant Colonel wished to sit at the board of directors? What are the facts of which the Colonel asserts that I am ignorant? All my propositions are founded on facts. If he alludes to the affairs of the companies, I have never professed to know anything about them; but when I do, perhaps, the gallant Colonel will not approve of my openly asserting them. Is the party who is now gone abroad with an invention for extracting the silver from the ore really an inventor—or one of those illusions that have so repeatedly been made by the manager, whose superior scientific attainments have so much excited the gallant Colonel's admiration? If the manager had given to the promoters one-half of the money he has most extravagantly thrown into the mines—viz., a million was taken out of one and thrown into another—they would have thought much more of Mr. Taylor's scientific management, which, on all sides, is now much doubted. I am now perusing the deeds of the companies (which the directors have refused me copies, at my own expense) at the office, which is at the west end of the town, and open from 10 till 4—most convenient for a merchant, whose hours are from 9 to 5 in the city. I shall be able to call for books and papers, and when I have made myself acquainted with those facts of which the Colonel says I am ignorant, it will be time for me to consider whether I shall call for a special meeting, to ascertain whether it would not be advantageous to have a committee to investigate the affairs of both companies.

Oxford-terrace, Hyde Park, March 28. RICHARD TYRRELL.

PATENT GALVANISED IRON COMPANY.

SIR,—You will, no doubt, have a report of the proceedings at the meeting of the shareholders held on the 31st ult. Being present, and having embarked largely for my means in the speculation, I hope you will do us justice; but, at the same time, I must beg leave to say, that the dividend does not appear to me justified by the accounts, although I can very well imagine, that there was a good reason for making a dividend, when a further sum of 50,000*l.* was required. This company took up the works of the Porth Cawl Iron and Coal Company, with Messrs. Malins, Rawlinson, John Field, jun., Dr. Spurgin, and others, as directors, the former being the original proprietors—and having had to pay 50,000*l.*, or thereabouts, for the debts of the first company (shares being offered for nothing, if the responsibility would have been taken by the purchaser), now require another 50,000*l.* to establish their works. I am glad to receive the dividend; but, as that is only 8 per cent., while I am called upon to subscribe my proportion per share of 50,000*l.*, which I cannot well afford, with all the advance in the iron trade, I am, I must confess, somewhat sceptical, and do not much like advancing more. Your position will, doubtless, enable you to ascertain the facts, but I cannot help thinking, as I said before, that all is not quite right. I do not understand the advertisement of the company, and that which follows it from Messrs. Morewood and Rogers. I suppose either the one or other is right, and I think we ought to be better informed. Can you inform me the price of shares? T. MORGAN, Jun.

Cheltenham, April 1.

MINING DISTRICTS OF CORNWALL.

SIR,—A few months ago, when engaged in reducing, for publication, several maps prepared for tithe commutation purposes, I conceived the plan of publishing a series of maps of the mining districts of Cornwall, in the midst of which I have spent the greater part of my life. I possess greater facilities for executing a plan of this nature than, perhaps, any other person, from the fact of my having surveyed and mapped about 60,000 acres of the land, embracing several of the mining districts—for instance, Gwennap, Breage, Perranzabuloe, and St. Agnes. All these, besides many other parishes, including Camborne, I have lithographed for landowners.

The *Geological Map of the District between Camborne and Chacewater*, published by Mr. Richard Thomas, in 1819, is drawn at a scale so small, as to render it necessarily deficient of a great deal of matter which it should contain to render it very useful. That district was then, and is now, the *principal* mining district of Cornwall; but, since that date, there have arisen several new mining districts, such as Liskeard, Newlyn, Tywardreath, and St. Just, or they have considerably increased in importance since that period.

Now, I consider that a series of maps, at a convenient scale—say, twelve chains to an inch—representing the geological character of the districts, and containing all known lodes, cross courses, flookans, and elvan courses, shafts, *workings* at surface on lode, boundaries and names of existing setts, together with all the closes, roads, and houses (giving thereby a *locality* to all the mineral features), would be acceptable to the mining community, and especially to non-resident adventurers. I am, therefore, at present engaged in carrying my plan into effect, and the first district of my labours is that of Gwennap—the principal district of all. I resided in that parish several years, and was pretty extensively employed there in surveying the land, planning mines, mine setts, &c., and from that circumstance am in possession of considerable needful *detail*.

After Gwennap will follow the other districts, but the precise order of publication I cannot yet determine. There are Redruth, Camborne, Illogan, Breage, St. Just, Perranzabuloe, St. Agnes, Newlyn, St. Austell, St. Blazey, and Tywardreath, and Liskeard, all extensive districts; and the minor districts of Gwinear, Phillack, and St. Erth, Ludgvan and Lelant, Towednack Zennor, and St. Ives, St. Hilary, and Perranuithnoe, and Wendron and Sithney.

You will, of course, understand that all this publication will, and ought to, depend on the patronage of the lords, adventurers, and agents of the mines in the districts respectively, for, without this, it would not be prudent to proceed far with a work involving considerable expense. I shall publish by *subscription*, and my list is now acquiring daily increase.—Your approbation of my labours will afford me encouragement therein; when you receive a copy of the "Map, No. 1," which (with your permission) I shall send to you as a specimen of the series, you will judge how fairly I am entitled to the patronage of the mining public. If this patronage be afforded to the extent anticipated, I hope, from the facilities at my command, to be able to complete the series by the end of the ensuing summer. A printed "report," descriptive and statistical, will follow the maps.—*Truro, April* 1. R. SYMONS.

[We can only say, that when we see our correspondent's map we shall be able to judge of, and report on, its merits. We are glad to find a fellow-labourer in the field, and he need not fear but that he will have fair play and full justice at our hands.]

IMPROVED METHOD OF GENERATING STEAM.

SIR,—I should feel obliged by your allowing me to direct the attention of your readers to the objects of the patent, advertised for sale in your last Journal, as "an improved method for generating steam and the evaporation of fluids." Its advantages consist of an improved apparatus for generating steam as a motive power, and for the evaporation of fluids without the means of boilers now in use; and, although *one-fifth* less in bulk than ordinary boilers, this apparatus is capable of producing not only instantaneous effect, but an extraordinary saving in *fuel*, *weight*, and *space*. At the same time, it effectually prevents the possibility of explosion, inasmuch as there exists no necessity for keeping up the heat of a large bulk of water to a boiling point, as is at present the case. Simply by admitting a certain quantity of water at one end of this new generator, it is converted in the hot flues of the apparatus into steam with the rapidity of lightning, which steam rushes out of the other end of this generator in an expanded and powerfully active state to propel the piston; and thus to set the engine to work spontaneously and without loss of time. No large fires need be kept up, effecting thereby an economy of fuel, equal to one-half of the present consumption; and as the flues are so constructed as to offer an unusually large surface to the fire, and only a small quantity of water need be converted into steam at one throw, the truth of the above remarks must be obvious. Considering these unquestionable advantages, coupled with the small size of the apparatus, not occupying one-fifth of the space now required by the boilers at present in use, I cannot but believe, that, as soon as my invention is fairly brought before the public and the Governments, its adoption must become universal, and its result a complete revolution in steam navigation. J. ROBBINS.

PREVENTION OF ACCIDENTS IN COAL MINES.

TO THE EDITOR OF THE DURHAM ADVERTISER.

SIR,—I have for a long time turned my thoughts upon devising some plan of prevention of the many dreadful explosions which are repeatedly occuring in our coal mines, and with what success, a trial of my scheme can only determine its worth and efficacy, and the time spent upon it will be amply repaid, should the invention in any way tend to the lessening the danger and risk of life in mining operations. The suggestion I am about to make has the recommendation of being practicable, both physically and financially, and on being adopted in any pit, must afford at least this satisfaction to the poor workman, that his life is sought to be made more secure than before. I, therefore, with deference, propose to those gentlemen interested in collieries, to make a trial in some of their considered dangerous pits,—it is a simple invention, therefore more easily tried, and the expense will amount to but a trifling sum among other items of expenditure in pit accounts. I propose that each viewer and miner be supplied with an air-tight bag or pillow, furnished with a tube and stop cock, which should be inflated at top of shaft, at a place erected on purpose, with a pair of bellows, where pure atmospheric air may be obtained; and, as each person descends, to have his bag attached to his back by a cord (which, from its lightness, cannot be an incumbrance), and when arrived at his post, he will hang it beside his Davy lamp, and, on his "shift" or work being done for the day, he opens the tube and suffers the atmospheric air to escape, which will, from all the workmen performing the same operation daily, greatly contribute to keep under the explosive mixture or fire damp, and thereby render the workings more safe and healthy. And upon an explosion of fire damp taking place, or any warning be given or perceived of its coming violence, I would have the miner to fall prostrate on the ground with the pillow or bag beneath his head and the tube in his mouth, he will thereby inhale pure atmospheric air, and may thus escape suffocation from the carburetted gas around him. And suppose a pit having a hundred men down the shaft, one hundred gallons or one hundred cubic feet of pure atmospheric air would be carried into the workings daily. Would that I could induce that worthy and philanthropic gentleman, Mr. Mather, of South Shields, to award his valuable aid and influence to have my plan tried in some of the more dangerous pits in his neighbourhood: I would be glad to give a more detailed specification of my plan, as, if it only mitigates the danger, it will, at least, be a blessing to humanity. THOMAS DICKINSON.

Heighington, March 18.

IMPROVED RAILWAY SIGNAL LAMP.

SIR,—In handing you a description of my Signal Lamp, I think it necessary first to point out the principal inconvenience of the old lamps that suggested to me the necessity of amending it. The lamps that are in general use upon most lines (commonly known as tricoloured signal lamps), are constructed with two cases—an internal and an external. The internal case to which the suspending handle is attached contains the coloured glasses, and in the external case is fixed the colourless glass for the white light. The outer case is prevented from dropping off by kneed springs. When a signal is required the inner case is made to revolve to display the required light; but the calcined wick, dust, &c., which could not be avoided, together with the inequalities on the surface of the inner case, which it received when disengaged from the outer one, so jammed the cases together that it generally causes much muscular exertion to move them; the springs, by working perpendicularly, often broke the coloured glasses. When the inner cases are taken out for cleaning, the springs themselves frequently break, causing the liability of losing the outer case, as the policemen were *grinding* off these signals while the train was in motion.

1. Red. 2. White. 3. Green.

The improved lamp consists of—1st. One case, which contains the colourless glass and oil lamp, the glassy slide round in a groove at top and bottom; and, to prevent breaking, they are defended with a cover, having a slide in it for the hand knob working through; this knob is attached to a narrow tin frame that surrounds the glass. The white light being permanently fixed in the centre, the coloured glasses may respectively be passed between the light and the door glass. By means of the top being hinged, the inside of the lamp is easily got at to be cleaned, which is of great advantage to signal lamps. A square and a round knob may insure the police at night of the requisite signal, and assuredly the moving of the glasses is both rapid and easy. I may add, that the lamp has been successfully tested upon this line, and I am at present getting a supply ready for the guards, &c. Inclosed is a sketch of the lamp, as it appears when finished. W. STEELE.

Edinburgh and Glasgow Railway Station, Coulairs, March 31.

BLACKWALL RAILWAY COMPANY.

SIR,—The subjoined is the copy of a letter which I lately forwarded to the chairman of the above company; the favour of your good offices by its insertion in your Journal will much oblige me, so that the shareholders may be made acquainted with the principle which it embodies. The paramount advantage it holds out appears to me incontrovertible; for I firmly believe that our shares would soon rise 20 or 30 per cent. on its adoption. I hope that others, equally interested as myself, will take up the subject with vigour, and that some bold plan may forthwith be adopted, to place the affairs of the company in a highly prosperous position. E. Z.

"A proprietor presents his compliments to Mr. Daniel, and is sure that any suggestion, having a tendency to advance the prosperity of the company, will receive the serious and attentive consideraton of the directors. Impressed with the conviction as to the feasibility of the adoption of some means to reduce the amount of debentures, the proprietor begs to submit that a proposal might be made to the shareholders to advance 5s. or 10s. on their shares, and with the proceeds to withdraw an equivalent number of debentures, the interest on which would in future be added to the half-yearly dividends, and thus greatly enhance the value of the shares. At all events, the plan might be submitted to the deliberation of a special general meeting, and, if approved, might be repeated every two or three years, and by this means secure the gradual liquidation of the whole debt. The proprietor is aware that there are many circumstanced like himself, to whom the advance of even 5s. per share would be very inconvenient, nevertheless, when the positive advantage which would naturally result is taken into consideration, I believe that few dissentients would be found, and, if any, some plan might readily be proposed to meet the difficulty. The impression on the mind of the proprietor who does himself the honour of addressing these few lines to Mr. Daniel is, that no feasible or legitimate objection can be raised to the above proposition. Under these circumstances, he requests, with all respectful earnestness, that Mr. Daniel will have the goodness, as soon as possible, to submit this communication to the board of directors.—*Hall of Commerce, March* 24."

PATENT IMPROVEMENTS IN CHRONOMETERS.

WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each.

DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

SIR W. BURNETT'S PATENT—THE CHEAPEST AND BEST PROCESS for the PRESERVATION OF TIMBER, CANVAS, CORDAGE, COTTON, WOOLLEN, &c.—LICENSES GRANTED to NOBLEMEN and GENTLEMEN to use the preparation; and to others, for the purposes of trade, on advantageous terms.

HYDRAULIC APPARATUS AND TANKS,

for the expeditious preparation of the above materials, at the principal station, MILLWALL, POPLAR, nearly opposite Greenwich.

Numerous SPECIMENS and TESTIMONIALS may be seen, and every information obtained, at the office, 53, King William street, London-bridge.

PATENT GALVANISED IRON COMPANY.—CAUTION.

—This PATENT was decided by the Jury, in the case of Patteson *v.* Holland, tried in the Court of Common Pleas, at Westminster, on the 12th, 13th, and 14th of February last, to be INVALID.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

MOREWOOD and ROGER'S PATENT METAL.—This article was at first sold under the name of Galvanised Tin Plates, but the patentees finding that the public, in some instances, overlooking the word Tin, confounded the article with Galvanised Iron, and that the character of their metal has thereby sustained injury, are desirous of giving it a name so distinctive as to prevent such mistakes, and consequent disappointment to purchasers, in future. They, therefore, respectfully request purchasers to inquire for Morewood and Roger's Patent Metal. In order to enable the public readily and at first sight to distinguish between the two metals, it may be well to inform them, that Galvanised Iron has a plain zinc-like appearance, while M. and R.'s Patent Metal has a smooth crystalline surface.

MOREWOOD AND ROGER'S PATENT METAL,

Patronised by the Admiralty and the Honourable Board of Ordnance, being extensively used in her Majesty's Dockyards, at the Tower, the extensive new fire proof warehouses of the Liverpool Docks, and elsewhere, for every variety of roofing, and other purposes, where a strong, light, cheap, and durable material is required.

It has been found by experience, that this article is beyond all comparison superior to zinc; possessing, as it does, all the advantages arising from the strength and firmness of iron, combined with perfect immunity from rust; whilst it is free from the very serious objection which applies to zinc—viz., its contraction and expansion, consequent upon every change of temperature, and from which circumstance leakage must of course result.

This material is not likely to be destroyed by fire, as is the case with zinc and lead which melt and run down, thus freely admitting fresh air to the fire, and causing it to burn more fiercely. It is, therefore, obviously well adapted for all the purposes above-named, and most importantly so, when there is the possibility of fire. It is also peculiarly suitable for chimney-tops, gutters, spouting, and out-door work generally, possessing the strength of iron, without its liability to corrosion. It is by far the most economical metal roofing that can be obtained, in consequence of its strength, as it may be laid without boards, and upon the lightest rafters.

This mode of preserving metal from rust does not only apply to sheet-iron, but also to manufactured iron in any form, as bolts, nuts, hinges, nails, &c., &c.

For full particulars apply to S. Holland, 34, Gracechurch-street.

ATLAS ASSURANCE COMPANY,

92, CHEAPSIDE, LONDON.—*Established* 1808.

DIRECTORS.

JOHN OLIVER HANSON, Esq., Chairman.
WILLIAM GEORGE PRESCOTT, Esq., Deputy-Chairman.

Sir William Baynes, Bart.	Samuel Eustace Magan, Esq.
Arthur Edward Campbell, Esq.	Moses Mocatta, Esq.
Thomas Chapman, Esq., F.R.S.	James William Ogle, Esq.
William Laforest, Esq.	Emanuel Pacifico, M.D.
Donald Maclean, Esq.	John Peter Rasch, Esq.

Auditors—Francis Bligh Hookey, Esq., and Joseph Pulley, Esq.
Actuary—Charles Ansell, Esq., F.R.S.
Solicitor—Thomas Browning, Esq.
Surveyor—Thomas Hopper, Esq.
Assistant Surveyor—Thomas Lloyd, Esq.

FIRE DEPARTMENT.

RETURNS.—The directors request reference to the fact, that *twenty per cent.* was returned by this company on the amount of premiums paid for the five years up to Christmas, 1841, on all policies for £300 and upwards, which had been in force for one year at that time.

The next periodical accounts for returns will be made up to Christmas, 1846.

RENT.—This office (independent of the returns) offers to persons effecting assurances, the further advantage of an allowance for the loss of *rent on buildings* rendered untenantable by fire.

RENEWALS.—Policies due on Lady-day should be renewed within 15 days thereafter.

LIFE DEPARTMENT.

The attention of the public has, in the advertisements and proposals of this company of late years, been called to a Table of Additions applicable to and expectant on Policies of particular dates and ages; the directors now beg to refer to a statement (which may be obtained on application at the office in Cheapside, or to any of the agents in the country) of sums *actually paid*, showing the sums respectively assured and the bonuses thereon.

Persons assured for the whole term of life in *Great Britain* or *Ireland* respectively, will have an ADDITION made to their policies every seventh year, or an equivalent REDUCTION in the future payments of premium, at the option of the assured.

The FOURTH SEPTENNIAL VALUATION will be made up to Christmas, 1844, and the directors hope to announce to the life policy holders, about the end of the ensuing May, the result of the actuary's computations. *All POLICIES effected during the next seven years*, and remaining in force at Christmas, 1851, will participate in the valuation to be made up to that date.

ASSURANCES FOR SHORT PERIODS may now be effected in this office at considerably reduced rates of premium.

The company's rates and proposals may be had at the office in London, or of any of the agents in the country, *who are authorised to report on the appearance of Lives proposed for Assurance.*—92, Cheapside, April, 1845. HENRY DESBOROUGH, Sec.

ARGUS LIFE ASSURANCE COMPANY,

39, THROGMORTON-STREET, BANK.

Empowered by Special Act of Parliament, 5 and 6 William IV., cap. 76.

THOMAS FARNCOMB, Esq., Alderman, Chairman.
WILLIAM LEAF, Esq., Deputy-Chairman.
Consulting Actuary—Professor Hall, M.A., of King's College.

LOW RATES OF PREMIUMS.

In addition to the subscribed capital of £300,000, the assured have the security of the company's income of £60,000 per annum, yearly increasing, and an accumulating assurance fund, invested in Government and other available securities, of considerably larger amount than the estimated liabilities of the company.

ANNUAL PREMIUM TO ASSURE ONE HUNDRED POUNDS.

Age.	*For One Year.*	*For Seven Years.*	*Whole Term.*
20	£0 17 8	£0 19 1	£1 11 10
30	1 1 8	1 2 7	2 0 7
40	1 5 0	1 6 9	2 14 10
50	1 14 1	1 19 10	4 0 11
60	3 2 4	3 17 0	6 0 10

One third of the *Whole Term* premium may remain unpaid at 5 per cent. comp. int., as a debt upon the policy for life, or may be paid off at any time without notice.

The medical officers attend daily at a quarter before Two o'clock.

EDWARD BATES, Resident Director.

A liberal commission to solicitors and agents.

GREAT BRITAIN MUTUAL LIFE ASSURANCE,

14, WATERLOO-PLACE, PALL-MALL, LONDON.

THE CHISHOLM, Chairman.
WILLIAM MORLEY, Esq., Deputy-Chairman.

GREAT ADVANTAGES OFFERED TO POLICY HOLDERS BY THIS INSTITUTION.

A large and immediate accession of assurances by the transfer of the policies of the "Achilles British and Foreign Life Assurance Association."

The whole of the PROFITS DIVIDED annually among the MEMBERS, after payment of five annual premiums.

An ample guaranteed capital, in addition to the fund continually accumulating from premiums, fully sufficient to afford complete security.

CREDIT given to MEMBERS for half the amount of the first five annual premiums without security.

CREDIT allowed to MEMBERS for the whole of the first five annual premiums, on satisfactory security being given for their payment.

Transfers of policies effected and registered (without charge) at the office.

Claims on policies not subject to be litigated or disputed, except with the sanction, in each case, of a general meeting of the members.

An extremely low rate of premium, without participation in the profits, but with the option, at any time within five years, of paying the difference between the reduced rates and the mutual assurance rates, and thus becoming members of the society, and entitled to a full participation in the profits.

Extract from the Reduced Scale of Rates, for an assurance of £100.

Age.	One Year.	Seven Years.	Whole Life.
20	£1 0 9	£1 1 6	£1 13 11
30	1 2 9	1 3 3	2 2 1
40	1 5 6	1 7 6	2 16 4
50	1 15 9	2 1 6	4 1 11
60	3 3 5	3 17 0	6 8 3

Full particulars are detailed in the prospectus.

A. R. IRVINE, Managing Director.

Earl Fortescue has, we learn, given orders for the consulting engineer of the West of England Land Drainage Company, to survey his estates in North Devon, in order to adopt its beneficial aid to its utmost extent by thorough draining.

TAFF VALE RAILWAY.—It has been determined, in consequence of the increasing traffic on this railway, to lay down a double line without delay. At present, this increased accommodation is to be confined to the distance between the Cardiff terminus and the Taff Vale station; operations have been already commenced, and this portion, comprising not more than seven miles, will, consequently, be completed without delay.

CLITHEROE JUNCTION RAILWAY.—It is contemplated by the directors of this company to extend their line through the valley of the Ribble to the town of Settle. The extension will there join the proposed North-Western Railway—thus forming the most direct railway communication between Manchester and the north of England and Scotland.

NOTICES TO CORRESPONDENTS.

"THE SMELTERS' MEMORIAL."—It was our intention this week to have given a copy of this precious document with our comments, but we are precluded from so doing from press of other matter; we purpose, therefore, again next week giving an Enlarged Sheet, when the Memorial entire, with our remarks of the present week, and a continuation, will appear—thus forming one of the most important documents to the Home Miner, which, we believe, has ever yet been placed before him in print. We hope to have the assistance of those most interested—the miner and the mine adventurer—in discussing the subject, and tearing off the cloak from the smelters, slaveowners, foreign mining directors, and Liverpool shipowners and merchants, whose names are appended.

NEW INVENTIONS.—We should feel greatly obliged to those of our readers who may be in possession of particulars connected with improvements or new inventions, to favour us with details for publication.

NORTH WHEAL ROSE.—The meeting having been convened to discuss some legal points, and the directors, considering it would be detrimental to the interests of the adventurers to have the proceedings published, declined admitting our reporter. We think they were right under the circumstances, and we, therefore, do not give insertion to the report forwarded us by A. W., whose kindness we acknowledge. The question of a piece of ground being disputed with the East Wheal Rose adventurers, is of too private a nature to interest our readers.

WHEAL ANDERTON.—Captain Carpenter's letter shall be inserted in next week's Journal.

WHEAL CATHERINE.—A correspondent (I., York) writes:—"The projectors of this mine, some months since, made calls, to put new water-wheels, &c.—why is the concern now at a stand still?" Perhaps some correspondent, or the parties concerned, will enable us to answer the inquiry.

ARCHIMEDIAN RAILWAY.—The most detailed description of Mr. I. Farrell's invention which has been published, appeared in *The Mining Journal* of the 22d February.

Received.—A Constant Reader (Hackney)—J. C.—J.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, APRIL 5, 1845.

It is somewhat satisfactory to find that we are not—at least, for the present session—to be further attacked by legislative enactments as regards our mines. The "Mines' Regulation Bill" is, we understand, withdrawn; no thanks to our Cornish Members, who, although a western contemporary tells us have been at their *posts*, we fear, are too much like the position in which our witty contemporary places them to be likely to *move*. There are some good points in the Bill which we should like to see carried—at the same time, we should be well disposed to cut out a considerable portion. We would recommend the hon. Member who introduced the bill to place it in the hands of some one who better understand the subject.

In continuation of our remarks of last week, on the Liverpool Copper Trade "Memorial," we now proceed to the statistics, and the several extracts from anonymous writers appended to the document alluded to. The first table gives us the returns of the imports, from 1831 to 1841, inclusive; the estimated quantity of Copper in the former year being 528 tons, represented by 2545 tons of ore, and, in the latter, 10,102 tons of copper, or 48,685 tons of ore—no slight increase, be it observed, but which, according to the memorialists, enable this country to supply "three-fourths of all the copper consumed in the world;" it being forgotten that England, without the kind aid of the produce of slave labour in Cuba, had, antecedent to these imports, held the same position as to supply.

The next table with which we are presented gives the return of ores imported in 1843, on which the duties were paid, as 55,720 tons, being double the quantity imported in 1838—nearly eight times the quantity imported four years previous, and more than twenty times the imports of 1831. We pass over some tabular matter, which appears to have been introduced rather to abstract, than to direct, attention, and take the average monthly wages of miners in Cornwall, as submitted by the Liverpool gentlemen and shipowners, and accordingly we find that the average in 1840 is set down at 2*l.* 5*s.* 8d., and for 1843, after the tariff came in force, at 2*l.* 2*s.* 10d.—the simple reduction being 2*s.* 10d. per month. If this were all, the miner, with his wife and six children, would only be mulcted of one penny each per week by the new measure—that is, assuming we are correct in our premises; but how does this agree with the statement made by Mr. TREFFRY, at the meeting held in Truro?—how does it accord with facts? We call upon the Memorialists to prove their statement, and which, even could their representations be substantiated, we then ask them—we ask the Minister—whether 10*s.* 8½d. per week is fair or adequate wages for the miner, whose life is spent underground, subject not only to the danger attendant his vocation, but to those numerous complaints which tend to lessen the duration of life from the air which he breathes, and the noxious vapours or gases which arise—subject to the extremes of heat and cold, and the fatigue of descending and climbing, in some cases, 1500 to 2000 steps each "core"—at times subjected to a humid, and at others to a damp, atmosphere. It will, doubtless, be maintained, that the wages are adequate, and more than are obtained in agricultural districts; but, let it be remembered, that in the one case the miner is working underground, without the enjoyment of the fresh air; that his life is one not only of fatigue but danger; and, then, let us ask these philanthropic slaveowners, these Memorialists, whether they consider he is well, or ill, paid. If the latter—for we think we can shame them into an honest reply, at least to so plain a question—then, we would ask, what is the cause of this low, this unnatural, rate of wages? Pause we for a reply—it may not be readily given, but truth prompts it, and the record before us, that in 1831 only 2545 tons of copper ore was imported into this country, while in 1843 it amounted to 55,720 tons, is quite sufficient to convince the most sceptical—aye, even those whose interest would lead them to arrive at a different conclusion, that the working miner is sacrificed to the foreign mineowner, and the lucre-loving smelter. Mr. E. BUDD, of the smelting-house of VIVIANS, of Swansea, if we mistake not, has contributed a paper, in which he gives the quantities of copper ore and Chilian copper imported into France from South America, the figures of which, being given in kilogrammes as with francs, appear of vast magnitude. On comparing the years 1840 with 1843, we find that the quantity of copper ore imported into France was 528,451 kil.; while in 1843, with all the advantage given to the foreign smelter, by the duty imposed by the tariff on ores imported into this country, the quantity was just simply 572,407 kil.—an excess of 43,956, or less than 10 per cent. Taking the kilogramme at 2¼ lbs., we should have the whole quantity of foreign ores imported into France in 1843 as something like 575 tons, which, at a produce, say of 20, would give 115 tons of copper; while the imports to this country for that year were 55,720 tons of ore, estimated to contain 11,422 tons of copper, or about 100 times the quantity. We have read the fable of the "Bull and the Frog," and we apprehend that, however the latter may attempt to swell himself, so as to equal the former, the effect will be the same.

We must, however, needs take the extracts from correspondence. Our first is so brief, that we may at once copy it, and let it speak for itself:—"Valparaiso, 24th of August, 1843," addressed to Messrs. BROWNELL'S and Co.—this letter, it will be observed, is something like nineteen months old. "The copper bars (says the anonymous correspondent) you may send to the continent, for which several shipments are making, particularly to France, where the price is said to be remunerating." Pray, Messrs. BROWNELL'S and Co., allow us to ask you if you have received no later advices as to the *said* remunerating prices. Next, we have another extract—these gentlemen being too cautious to give us either the names of their correspondents, or the general substance of their advices, being satisfied with garbled extracts, so as to suit the object they have in view, and we must in justice include Messrs. TODD, NAYLOR, and Co., with the Messrs. BROWNELL, who have certainly put themselves forward in a manner which entitles them to the gratitude of the foreign mine adventurer, the smelter, and the slaveowner; while Liverpool, whose wealth is based on the slave trade, and the blood of their fellow-creatures, may boast of men, who, for their own aggrandisement, would annihilate 100,000 individuals, by depriving them of the means of support by their labour in this country.

We may here consider for a moment the position of the mining and the smelting interest. If we take the former, we find that in the copper and tin mines of Cornwall not less than 100,000 individuals are directly or indirectly employed, which we may assume covers a population of five times the number. If we go to Ireland, let us take the Bearhaven, the Knockmahon, and the Wicklow Mines. Wales, although comparatively insignificant with other provinces, gives employment to those who, located in a mountainous and barren district, would otherwise be in a state of penury and destitution. Thus, then, it will be seen, that anything which shall interfere with, or destroy, this branch of our national industry and wealth, is calculated to inflict an injury which, once sustained, can never be repaired.

However, let us see what is the benefit likely to accrue from the import of foreign ores, and the destruction of our home mines: the effect of the latter is too evident to require remark, but the advantage which may attend the former, so far as this country is concerned, appears to us to have been misunderstood—while the Memorialists would endeavour to blind the Minister. It is an old saying, "none are so blind as those who will not see," and Mr. GLADSTONE, Lord SANDON, and, forsooth, we may say, our popular "free trade" Prime Minister, Sir ROBERT PEEL, will, doubtless, act up to the mark. We are, however, digressing, and must devote some space to Messrs. TODD, NAYLOR, & Co., who have taken so lively an interest in the matter. They tell us that a correspondent writes to them on the 29th of December, 1843, from America—being about fifteen months back, while letters come over in as many days—that the Cuba people are dissatisfied with their net proceeds of sales in this country, forgetting that the produce of their ores had deteriorated, and that any depression in the standard was caused by the influx from *foreign* mines. The writer proceeds to state—from a "highly respectable" source, of course—that a cargo was about being shipped to Antwerp, to be smelted in the interior of Belgium; but, says he (not thinking for a moment that ever his letter would be set up in type), "from what I know of the both countries, I have no idea that the Belgians can compete with the United States in this business"—hear this, ye WILLIAMS'S, VIVIANS and GRENFELL'S, and will ye not laugh heartily when you learn that ores are sent from Cuba to Antwerp to pass into the interior of Belgium to be smelted? Messrs. TODD & NAYLOR'S American correspondent says, we "repudiate" the idea of Brussels smelting copper ores; send them to us on the Lake Ontario, Massachusetts, Boston, or New York, we can accomplish all this; and, having annexed Texas, if we possess not the power ourselves, we will give you a letter of introduction to our new colony. Really, we can hardly restrain our pen. One or two words, in sober seriousness, will render the absurdity of these extracts, abstracts, or summaries, so manifest, that it is hardly necessary further to canvass the question—yet we will do so, for we will not be content to "scotch the snake," we will even kill it.

In the letter to which we have just referred, it is stated that, some fifteen months since, a treaty was in course for the purchase of premises near Boston, for the purposes of smelting, and also the belief is expressed that they will soon be followed by other parties. Further, deponent "sayeth nought." Our next extract is from a letter addressed TODD, NAYLOR, and Co.—for, as we before observed, these gentlemen, with Messrs. BROWNELL and Co., take a prominent part in the farce, and, indeed, may be said to be the leading actors—which tells us under date Coquimbo, April, 1844, that the heavy losses on the shipment of copper ores to England, "consequent on the duties imposed there," have led their correspondent to "make copper" on the spot, and several of his friends have adopted the same course. We would like to ask this gentleman, how is it that he should complain?—the extreme duty is 6*l.* per ton on copper contained in ores of more than 24 per cent.; while on those of lower produce the duty is only 3*l.*; if we, then, take an average, or rather exceed it, and say 5*l.* per ton, which, we believe, is about the average duty paid since the tariff came into force, let the writer look back some two or three years, and ascertain the comparative prices at which English and foreign copper, or that entered in bond, and smelted in this country, fetched when exported to foreign markets. We think he will find 8*l.* to 10*l.* per ton was something near the mark; and yet, with this drawback, we find that the mines in Cuba and Chili made good headway; they paid dividends to the shareholders, and they increased their returns, so as to entrench seriously on the productive returns of our home mines—and yet the writer of this letter would have parties believe that the foreign miner is injured, because he is put on a *level* with the British miner, so far as regards the disposal of his produce, and who, if he has not realised the advance of 8*l.* or 10*l.* per ton, which he, no doubt, contemplated, should remember that it is the large imports of foreign ores which have reduced the standard, and, to a great extent, destroyed the mining interests of this country—therefore is it that the British miner has to complain of the injury inflicted on him by the Minister.

Another letter tells us, under date, Valparaiso, June, 1844, that "there are now orders from the United States, to purchase 1000 to 2000 tons of ore at *certain limits*, and these will be certainly increased, *so soon* as the means of smelting are in a more forward state." Can anything be more absurd, or convey a greater insult to any man of common sense, than to quote such a paragraph? One thousand tons of ore, at twenty per cent. produce, would give 200 tons of cake copper. Why, the WILLIAMS'S and VIVIAN'S would run it down in five or six days, and have it in market, ere our friends in the United States would have time to accept the bill for the amount, or pay the freight. We are told, it is true, that the orders will be certainly increased, WHEN the means of smelting ore are in a more forward state. This we believe; but if we said we comtemplate that ever they will be in a position to compete with Swansea, we should deceive ourselves, as much as we believe it is the object of certain parties to endeavour to practice a deception on others. The next document, to which we have occasion to refer, is that of the import of foreign copper at the port of Liverpool, which we find in 1844 had increased, the quantity during the past year being at the rate of 240 tons bars per annum, and about 800 tons pigs—or, in all, say 1000 tons; this, if taken at 75*l.* per ton, would give 75,000*l.*—while the annual produce of our Cornish mines in *ore* alone is nearly a million sterling, and the like returns from the produce of foreign mines imported into this country, to which is to be added the smelting charges. It is very well for parties to put forward figures, but let them be accompanied by comparative statements, and Government would then be enabled to judge, by having the case fairly put before them. That such will, doubtless, be the case, at a proper time, by the Cornish Members and those interested in mines, we do not doubt; but it appears to us that we cannot too soon "take the bull by the horns." Again, we find Messrs. BROWNELL ready to take the field, and, at the same time, advertise themselves as fit and proper persons to employ assistant bricklayers, Irish hodmen, and others needful—while we are also informed, very delicately, that they are open to receive orders for fire-brick; but this is not sufficient, for they also tell us, by their circular, that they have a house at Lima, "as well as at Valparaiso," for the sale of grey calicoes, called "domestics" (slaves, we presume), soap, and candles, but that the North Americans beat them. This cannot be helped—this is one of the advantages of free-trade; the greater the facility and local advantage possessed by any country, the more likely are they to supersede other states. Why, then, should these gentlemen bring forward the unprofitable state of their house at Lima, or Valparaiso, in the sale of "domestics," because the Yankees beat them in this article? We certainly cannot see how it is to affect the question, as regards the copper mines of this country. Let us, however, give them fair play; and there is an old saying as to giving to certain parties a sufficient length of rope. The £. *s. d.* question, as touching upon the interest of our Liverpool firm, peeps out with every additional word, for, we presume, they are ship-owners, and naturally look to return cargoes; so say they, let us get a freight on ores, and it will enhance our profits on our "domestics" and "dark blue cotton drills." The French, it would appear, have also dared to sell blankets cheaper than the English house at Lima—this is cruel indeed.

THE IRON TRADE.

The iron market continues remarkably firm, and holders are looking forward to better prices than even those already so advantageously obtained. Nevertheless, considerable anxiety is felt by those not incompetent to judge, respecting the issue of this unnatural re-action; many maintain that the present high prices are forced, and are indicative only of illegitimate speculation—while others consider that the rates have reached their maximum, and will shortly recede. From inquiries, however, which we have carefully instituted, we are informed that orders are still plentiful in all the iron establishments. A very large business has been done in Staffordshire during the week, although the price has sustained, as we announced in our last Journal, an advance of 2*l.* per ton. Notwithstanding the great increase in this and Welsh metal, orders have been extensively received both for foreign and home consumption, evincing, certainly, an expectation that not only will the present prices be maintained, but a further advance anticipated. The heavy payments which fell due this week have been met by the speculators with unexpected promptness, and this circumstance has, doubtless, tended in no small degree to create that confidence which has distinguished the market for the last few days. Scotch pig maintains its firm position, notwithstanding the attempts of some holders who had purchased when the market was depressed, and now sought to realise a profit at the expense of the makers; the quotation was 6*l.* per ton, and Scotch about the same. No Swedish was in hand, but sanguine anticipations were entertained that the French and Belgian Governments would follow the example of Sardinia, and remit, or at all events reduce, the duty on pig-iron; and as the native supply for the construction of the continental railways will be wholly inadequate to the demand, the step would certainly be warranted, more especially as the benefits to the countries would more than compensate for any temporary loss.

State and Prospects of the Iron Trade in South Wales.—The price of iron is still advancing, and all the works are in full operation. It is with the greatest difficulty the makers are persuaded to take further orders at any price, in fact, some of the largest firms have closed their order books; 12*l.* 17s. 6d. per ton has been refused for rails, and 7*l.* is the price for pigs. A general advance of wages to the men has taken place from the 1st of this month, in most of the works such advance being at the rate of 10 per cent.; a further advance is already talked of, and will no doubt, if the demand for iron continues, soon be given. Some peculiar circumstances, different from other periods when the demand for iron has been great, and the prices high, appear to characterise this re-action in the trade. Very trifling stocks appear to be held by the iron merchants, and almost the whole of the orders given on speculation have yet to be made; the consumption is, however, at present greater than the make, and, upon this fact the speculators principally rely for an advance. A new feature in the trade is, the lately established custom of the manufacturers in most cases to require an advance of 2*l.* or 3*l.* per ton upon any orders they receive, to be executed at some future limited time. We must, however, observe, that by the high price in this country the foreign exports of iron are materially diminished, and the object of this must be to lower the stocks abroad fast, or to increase the make in other countries. In a few weeks we hope to resume this subject in a more detailed and statistical manner.

We are acquainted with a party who, during the last week, effected the purchase of 1000 tons of common bar-iron, for delivery in June next, at 10*l.* a ton.

The ironmasters' quarterly meetings will be held next week, as follows:—On Tuesday, at Walsall; Wednesday, at Wolverhampton; Thursday, at Birmingham; Friday, at Stourbridge; and on Saturday, at Dudley.—The coal and lime masters' meeting will be held on Monday, the 14th inst., at Stourport.

The Neath Abbey Iron Company have commenced building two blast furnaces, at Cwm Neath, which will greatly benefit that place.

New Iron-Works in Wales.—Sir John Guest is about to erect a new blast furnace at Dowlais, and the new coal-pits about to be sunk by Mr. Crawshay Bailey will, in conjunction with several others recently opened, contribute to make Aberdare one of the most flourishing valleys in the United Kingdom. Among the rapid strides by which the iron-works in Glamorganshire are now progressing, we learn that the liberal and spirited proprietors of the Porth Cawl Iron and Coal-Works, Messrs. Mallinson and Rawlinson, are erecting another furnace at Cefn Cwsg, together with twelve coke ovens, and a large number of workmen's cottages. At Coed-y-Garth and Llwydarth, three new furnaces, coke ovens, blast-engine, workmen's cottages, &c., are erecting.—*Cambrian.*

Iron Mines and Works at Newton-Crommelin, County Antrim.—We have before us a circular note, convening a meeting, with a view to the formation of a company, to extend and carry on works for the making of pig-iron. It appears that there are, in that district, immense quantities of iron ore of good quality, and that already iron of the best description has been there produced; this is, evidently, a matter of public importance to this country, and we trust that, provided the materials and facilities be as represented, they may be properly worked. There should be forthwith an examination and report made by competent persons.—*Northern Whig.*—[We should be glad if any of our correspondents would furnish us with some particulars respecting so important an undertaking as the establishing of the above works would appear to be.]

Bishop Middleham Coal Field.—The lessees of this property have just obtained an excellent seam of five-quarter coal, at a depth of seventy fathoms, thereby proving that this much celebrated coal-seam extends over a district further south than has hertofore been supposed. The seam sunk through proves to be 8ft. 6in. thick, of first-rate quality and hardness, and corresponding with the boring made some time since for the owners by Mr. G. Stott, of Ferryhill.

Wheal Trewavas.—We are informed, that, within the last few days, a lode has been discovered in this mine likely to prove of the most valuable nature. It has the promise of great richness, and will, it is expected, realise the sanguine expectations expressed by the mining captains.

Ivy Bridge Consols.—The sale of materials on the 18th March was brisk, and the prices obtained very good, the amount realised being nearly 1100*l.*—a result mainly attributable to the zeal and ability of the auctioneers, Messrs. Skardon and Son; the sale was attended by miners from almost every part of Cornwall.—*Plymouth Journal.*

Exportation of Coals.—The Commissioners of the Customs having adverted to the resolution passed by the House of Commons on the 11th ult., referred to in their general order of the same date, repealing the export duty on coals, culm, and cinders, exported from the United Kingdom in a British ship, have issued directions to the several departments in London, and at the various outports of the United Kingdom, to the effect that bonds be no longer required under the 69th and 111th sections of the Regulation Act (3d and 4th of William IV., cap. 52), in respect to coals shipped in British ships, nor in respect to coals shipped in foreign vessels of countries under treaties of reciprocity, except where the benefits derived by such foreign vessels are by treaties confined to a direct trade.

We understand that positive information has been received within these few days that nitrate of potass and nitrate of soda have been discovered on the coast of Africa, in a situation where they can be procured in large quantities. It is stated that the parties to whom the locality is known have been engaging every available vessel at rates of freight varying from 4*l.* to 4*l.* 10s. per ton. There was a rumour to the same effect some time ago, but the report had died away, and was doubted, but it is now alleged to be placed beyond all dispute.

Atmospheric Railway—(*From a Correspondent*).—The uncertainty of the present system of conveyance by railroads, together with numerous accidents which are constantly occuring, either by collisions, explosions, or other almost unavoidable causes, to say nothing of the immense outlay of capital necessary, not only for the construction, but also for their continual working, has at length roused the public attention—desirableness of employing some other means both safe and more economical than the present system of transit by locomotive engines, and the only alternative appearing to be in the substitution of atmospheric pressure. The directors of the Royal Polytechnic Institution, ever anxious to meet the wants of the scientific world, have again incurred considerable expense in the construction of a working model of Messrs. Clegg and Samuda's Atmospheric Railway, by means of which even the most unlearned in these matters may attain a tolerably correct idea of the mechanical arrangements that are required for the adaptation of the pressure of the atmosphere to a system of locomotion on railroads. The model, which is made on a large scale—the rail being nearly eighty feet in length, that of the propulsion tube fifty feet long by one and three-quarter feet internal diameter—has been made on the premises, and reflects great credit upon Mr. Phillips, the chief engineer, under whose superintendence it has been constructed, as also upon those employed under him, and we have no doubt will be a great source of attraction, not only on account of its novelty, but also from the fact that the model, though apparently small, is sufficiently powerful to draw several persons; indeed, it is a common occurrence to see it carry a man weighing at least sixteen stone, and that also at an almost incredible velocity. It has already been a source of considerable amusement to the visitors (although it only has been working a few days), many of whom have been carried from one end of the gallery to the other by its power—thus being enabled to state that they have been propelled on a railroad, where neither collision nor explosion could possibly take place; the model is daily in operation.

CASE OF FOREIGN COPPER ORE.

Sir,—Your attention is earnestly and respectfully requested to the following facts:—

The smelting of copper has hitherto been mainly confined to Great Britain, giving confidence to operations, improvement in processes, and greater steadiness of price than would otherwise have existed.—Nos. 42, 43, 44, in the accompanying statements.

Three systems of fiscal regulations have been applied to foreign copper ores. Previous to 1829 they were prohibited; from 1829 to 1842 they were admitted, to be smelted in bond, and the produce re-exported, free of duty, and in 1842 they were admitted only on payment of duty, whether intended for home consumption or re-export.—No. 44.

British ores fluctuated more in price under the first system than either of the others.—No. 44.

The President of the Board of Trade, in July, 1843, stated that the present law was open for alteration, if not found to work well.—No. 39.

Imports, since 1842, do not indicate the well-working of the present system, but arise from peculiar circumstances.—No. 45.

The quantity of British ores raised has constantly increased under the importation of foreign ores.—Nos. 4, 46.

The value of British ores has increased by having an admixture of foreign ores to smelt with them.—No. 47.

The expense of importing foreign ores is, of itself, most ample protection to the British miner.—No. 51.

If the present duty is retained, the great bulk of the trade will be lost to this country, as was the case with lead.—Nos. 15, 16, 17, 42, 43.

Other nations are most anxious to obtain this business, and are directing their attention to it.—Nos. 7, 9, 9, 11, 12, 15, 17, 18, 19, 20, 21, 23, 24, 28, 29, 30, 31, 32, 34, 41.

The business is important to the British shipowner, who will suffer either from its loss or curtailment.—No. 48.

Chili is one of the most important, prosperous, and faith-keeping states of South America; imports all the manufactured goods she consumes, and that principally from England, in consequence of our taking copper ores in return.—Nos. 14, 39, 49.

The produce of her copper mines is almost the only means of payment Chili possesses.—Nos. 49, 50.

The smelting of copper ore has commenced in Chili, and received every encouragement from the Government.—Nos. 17, 20, 22, 52.

The exports to Chili have fallen off since the duty on copper ore was imposed.—Nos. 16, 17, 25, 26, 27, 33, 35, 40.

Memorials (copies of which accompany this) have already been presented to the Lords of the Committee of Privy Council for Trade, praying for the "Abolition of the Duty on the Importation of Copper Ores," and we now beg that you will promote our object.

We are, on behalf of the memorialists, your obedient servants,

W. Armstrong. C. Brownell.

No. 1.—The Memorial presented on the 3d February, as printed in the Mining Journal of the 15th of that month.

No. 2.—An account of Foreign Ores imported into Great Britain, and delivered in bond to be smelted, from the commencement of the trade to the 9th of July, 1842:—

Year.	Ore.		Tons copper.
1831	2545	tons, containing by estimate	528
1832	3960	" " "	821
1833	5931	" " "	1230
1834	7301	" " "	1515
1835	13945	" " "	2893
1836	18419	" " "	3822
1837	19496	" " "	4015
1838	27067	" " "	5616
1839	30195	" " "	6265
1840	42248	" " "	8766
1841	48685	" " "	10102

Total quantity of copper exported in discharge of bonds, 52,650 tons 2 cwt. 0 qr. 23 lb.

No. 3.—Account of Foreign Ores imported on which duties have been paid:

Year.	Ore.		Tons copper.
1842	15705	tons, containing by estimate	3219
1843	55720	" " "	11422

No. 4.—An account of Copper Ore sold in Cornwall:—

Year ending June 30.	ORE. Tons.	COPPER. Tons	cwt.	qr.	lb.	PRICE p. ton of COPPER at which the ore sold.
1832	137357	12099	0	1	22	.... £84 19 0
1833	138300	11327	15	3	18	.... 93 19 0
1834	143296	11356	10	1	9	.... 96 10 0
1835	150617	12349	6	1	6	.... 89 16 0
1836	140981	11714	9	2	27	.... 99 0 0
1837	140753	10883	10	3	10	.... 101 10 0
1838	145688	11618	11	1	15	.... 91 16 0
1839	159214	12526	16	1	4	.... 92 3 0
1840	148649	11244	4	3	17	.... 89 15 0
1841	147835	10945	9	2	13	.... 100 6 0
1842	154180	11244	17	1	4	.... 101 11 0
1843	153658	11683	10	3	1	.... 91 8 0
1844	158667	11736	14	0	5	.... 90 17 0

No. 5.—Abstract of the Parliamentary Return of Copper Exported, showing the quantity taken by the countries connected with Great Britain and by other countries:—

	Tons.	cwt.	qrs.	lbs.
TO COUNTRIES INDEPENDENT OF GREAT BRITAIN.				
Russia	0	7	1	4
Sweden and Norway	39	18	2	8
Denmark	4	11	2	6
Prussia	80	3	3	0
Germany	808	15	1	14
Holland	900	0	3	0
Belgium	463	11	3	6
France	5085	13	3	0
Portugal, Azores, Madeira	151	2	2	19
Spain, Canaries	56	5	3	25
Italy	810	5	1	7
Turkey and Greece	13	19	0	11
Africa	117	14	1	26
Foreign West Indies	183	2	0	10
United States	1483	4	2	8
Brazils	421	17	3	11
South America	83	11	3	17
	10704	6	3	4
TO COUNTRIES IN CONNECTION WITH GREAT BRITAIN.				
Asia (principally to the E. Indies)	6439	11	2	14
Australia	88	2	3	18
Gibraltar	90	17	3	4
Malta and Ionian Isles	44	1	3	27
British North America	141	1	1	0
British West Indies	222	3	0	19
Guernsey, Jersey, &c.	47	7	1	13
	7073	6	0	11
Total tons	17777	12	3	15

[*To be continued in next week's Mining Journal.*]

THE SMITHONIAN COLUMN.

We have within the past week had submitted to us the drawings, with models, of a series of iron columns for India, to be applied to viaducts, aqueducts, and piers, for suspension bridges, which possess not only novelty, but are attended with less cost—the first attracts attention, while the latter is the more important. It will be our object to describe, as briefly as possible, the arrangement, as submitted to us; and, being satisfied of the correctness of the data, we cannot but consider the appliance of *bar*-iron in superseding "cast" as one of the most important which has presented itself of late. In the present instance, it is proposed to erect iron columns in India, which, if manufactured of cast-iron, would be impracticable, from the difficulty attendant its transit, but the plan proposed—and, indeed, carried out—by Mr. Andrew Smith, C.E., and patentee of the "wire rope," appears to us to effect the desired object at a comparatively insignificant cost. The principle is simply this:—The application of bars of wrought-iron rising from a basis in which they are fixed, and being carried up in a conical form so as not to destroy the direct power, while they are braced at intervals—thus giving a strength with iron bars which would not be possessed by a solid mass of cast-iron, and, at the same time, carrying out the architectural orders and proportions Each bar or rod of iron possesses in itself a certain compactness, "soundness," and strength, which, when combined, is far beyond that of cast-iron; while if even a fracture took place in the one bar the others still remain to support the structure. In all cases where iron is employed there are two considerations—the one, economy as to its application—the other, that of its usefulness. We believe that the one and other will be found combined in the present instance, and hope in an early Number to present to our readers a sketch, with further remarks on the subject.

REMARKS UPON THE SALT TRADE OF INDIA.

The Bengal factory maund is 74lbs. 10oz., therefore a ton of 2240lbs. English will be equal to 30 maunds: the company's wholesale cash price at Calcutta for salt, far inferior to the English, is 4 rupees 1 anna per maund, or about 12*l.* 10s. per ton. It is considered that the expensive way in which the company manufacture their salt, as is always the case when a Government carries on a bulky manufacture, makes the cost of their salt, at Calcutta, to come to about 1 rupee per maund, or 60s. per ton; the present price at Liverpool is 10s. 3d. per ton (free on board); the highest ever known since twenty years, 17s.; or, take average of twenty years, as 13s. 8d.—to which add freight (at what shipowners would gladly take it to Calcutta), 15s. to 25s. per ton, say 20s.—making 33s. 8d., and the insurance and other small expenses to Calcutta, say 1s. 4d.—total, 35s.—showing 25s. difference between what British salt could be taken to India and the cost of the company's salt, saying nothing of the difference in quality in favour of British. The consumption of the presidency of Bengal alone, independent of the great quantity of smuggled salt, which it is impossible to ascertain, is about 200,000 tons annually, and a duty of 2 rupees per maund, or 6*l.* per ton, if a duty must be levied, would produce more than the present revenue obtained, and reduce the present wholesale price at Calcutta from 4 rupees 1 anna to 2½ rupees, giving the natives a better article at 40 per cent. less, and do away with the serious sub-monopolies; for it must be borne in mind, that though salt is 4 rupees in Calcutta, owing to the sub-monopolies, it becomes not only a more adulterated, but also a dearer, article in the interior, and as much as 20*l.* a ton may be considered the price up in the country. Unless a duty is levied upon salt manufactured in India, as well as upon British, any measure of reduction would prove nugatory, for no merchant or manufacturer could venture to send salt out, when the company have it at any moment in their power to reduce the price to one-half of the duty paid on British imports. The above has only reference to the Bengal presidency; but though the salt monopoly has not, up till lately, been carried out to the same extent in the Madras and Bombay presidencies, yet, from their population being so much poorer, it presses with as much severity upon the bulk of the population—the best proof of which is, that in the Madras presidency, notwithstanding the great increase of population, &c., the consumption of salt has fallen off from 37,455 garcis, or 93,687½ tons English, in 1830, to 35,441 garcis, or 88,602½ tons in 1840; and though, by continually advancing duties on salt, the net salt revenue in Madras has increased from 228,512*l.* in 1810, to 349,259*l.* in 1840, yet so had this tax exhausted the means of the poor ryot or labourer, that the land tax, the other great revenue of India, had, notwithstanding the advance of population, decreased 11 per cent. in that time, or about 300,000*l.*, showing that through this very tax the resources of the Madras presidency were so crippled that the land tax decreased nearly as much as the whole of the salt tax produced. In Bombay very much the same features offer themselves, and now, with the proposal to advance the price there to the Bengal standard, the distress it must bring upon the presidency cannot be imagined. Let it be remembered salt is a necessary of life for man and beast, that neither can live without, and that a great many of the famines in India amongst the inhabitants, and the pestilences amongst the cattle, have to be ascribed to the want of salt, or the means of the poor to buy it, which is the same. That the salt monopoly has been one of the principal means of retarding the progress of India cannot be denied, and how keenly its operation is felt by the people of India is evident from the serious riots accompanying the late attempt to advance the tax in Madras and Bombay. Let it be remembered that the labourer in the interior of India, living entirely upon vegetable food, cannot live without salt; that for the consumption of a family the smallest quantity necessary—say, one maund per annum, at the interior retail price of 6 rupees—amounts to more than 12s. 6d., whilst the wages are no more than at the most 4 rupees per month; the ryot has thus to spend one and a half month's earnings for salt, when he has perhaps only work for four to six months in the year, thus making the poorest of the poor pay an income tax of from 25 to 35 per cent. upon his hard earnings for salt. Two or three bags of rice are willingly given for one of salt in the interior. That a fixed duty upon salt, if required for the necessities of the state, can be levied with every security to the revenue, is best shown by the machinery of the Governments of Russia and Prussia, both possessing salt manufactories of their own, and an extensive line of sea coast. In the former a fixed duty of 3*l.* per ton is levied upon all imported salt; in the latter the Government contracts with the shipowners and merchants to deliver into their stores the salt at a fixed price, and then retails it at Government stores, all over the country, at the same prices, in any quantity, thus preventing any adulteration or sub-monopoly. It is the wish both of the home and the Indian Government to extend the cultivation of the great staples of India, such as cotton, sugar, flax, hemp, seeds, rice, &c. Nothing could be more conducive to that effect, and give a stimulus to the exertion of the poor peasant, than the removal or alleviation of the salt tax, and nothing would more facilitate the transport of bulky goods from India than bringing such an article of great consumption into play, which would allow the shipowner to make a small freight out without delay at either port, upon an article which would always command a ready sale. A reduction of duty to 2*l.* or 3*l.* per ton, by probably doubling the consumption, and doing away with the enormous smuggling and adulteration, for which there would be then no inducement, would probably increase the revenue of the company instead of diminishing the same.

Novel Railway for Crossing the Isthmus of Suez.—Sir W. C. Harris has lately suggested a method for crossing the Isthmus of Suez, at once novel and extraordinary. He proposes to construct a class of narrow steam-vessels, of about 800 tons burthen, suited for freight, and to transport them across the Isthmus of Suez upon trucks, by means of locomotive engines of adequate power—the vessels to be built upon the plan that will best counteract any additional strain upon the sides, involved by removal from the water; and the cradle truck, upon which each will be placed during the transit, must be constructed with the same view. He considers that the inaccessible character of the Mediterranean shore, lying over against the sea of Suez, and the general unfitness of all the ports on that coast for vessels of any considerable draught of water, clearly indicate the Nile, about Cairo, as the most eligible point to which the railroad could be carried, in order that the laden steamers may be transferred from one to other of the divided seas, through its always navigable channel. At the terminus of the Nile, and at the head of the sea of Suez, an inclined plane must be run out, under suitable shelter, to a distance sufficient to admit of the steamers being readily hauled upon the rails. It might be carried into deep water at an inclination of one foot in forty or fifty, and a truck upon wheels sent down it, so as to be brought beneath the floating vessels. This truck must be cradle-shaped, and so constructed as to receive the shoulders of the vessel, and thus afford her adequate support, when she rides high and dry. By means of a stationary engine, both the vessel and the truck must then be drawn up the incline, so that the first, sinking upon the second, will be raised upon the railway along which it is to travel. The locomotive engine, required to draw a laden vessel of 800 tons burthen across the desert of Suez, need not exceed above three times the power of those ordinarily used upon an English line; and the increased disposable breadth for the machinery would render this power one of easy acquisition. The masts of the vessel must be so constructed, as to fold over and lie flat during the transit, to prevent any action of the wind upon them; and a moderate width between the rails will then be sufficient. A station, to admit of vessels on their trucks passing each other midway, must be constructed in the centre of the line, and, as the entire distance of eighty-four miles could be accomplished in six hours, communication between Suez and Cairo might be daily held each way upon a single line of rails. Although constructed for steam-vessel trucks, these rails could be equally employed for the transit of mails, passengers, heavy baggage, and coals, by the adaptation of locomotive engines possessing only the ordinary power, with a train of carriages and trucks of the requisite breadth. The expense is not anticipated to exceed one million sterling, which would be far less than the cost of a ship canal, and it may almost seem estimated too low; but, when it is remembered that no ground is to be purchased, no bridges or tunnels to be constructed, and only a single line of rail required, the computation will not appear underrated. The advantages which Sir W. Harris anticipates as accruing from such an undertaking, he conceives to be of the greatest importance. The isthmus would be immediately rendered a commercial thoroughfare, without the necessity of shifting the cargoes of the vessels employed. The railroad might be completed in two years, whereas the construction of a canal, if possible, would occupy ten. One other important consideration is the entire suppression of quarantine, a benefit attainable by no other project, the rapidity of the transit through Egypt setting aside the necessity for this precaution; and the presence of a single *guardiano* would be a sufficient guarantee, that there had been no dangerous contact during the passage through Egypt.

Proceedings of Public Companies.

MEETINGS IN THE ENSUING WEEK.

MONDAY.—Austrian and Sardinian Railway, at Twelve.
TUESDAY.—Governor and Company of Copper Miners in England, at Twelve.
WEDNESDAY.—Tincroft Mining Company, at Two.
THURSDAY.—Imperial Gas-Light and Coke Company, at Twelve—Legal and General Life Assurance Company, at One—Eastern Counties Railway, at One—New Brunswick and Nova Scotia Land Company, at Two—Hayle Railway, at Two—Royal Mail Steam-Packet Company, at One.—Clarence Rw., One.

PATENT GALVANIZED IRON COMPANY.

A half-yearly general meeting of this company was held at their offices in Mansion House-place, on Monday, the 31st ult. The attendance was numerous, the proceedings being expected to be more than ordinarily interesting.—The report, which went with much minuteness into the details of the company's operations, is too voluminous for our present space, but it was considered to be of the most satisfactory character. After adverting to the prosperous state of the iron trade, it set forth the reasons which had induced the directors to anticipate the wishes of the shareholders, in the erection of four additional furnaces; they having, on their own responsibility, taken the necessary measures for so far extending the company's operations in Wales, and having made so much progress as to be able to announce their expectation of having one of the new furnaces in blast in July next, and at least one more before the end of the year. Calculations, grounded on the experience of the past year, were submitted, showing that, at the present prices, a profit of at least 30,000*l.* per annum might be expected from this extension. The black-band property was stated to have proved even more valuable than ever was anticipated, both in respect to the abundance of the minerals, and the facility with which they can be worked, and leaving no doubt that, when the furnaces are in operation, the company will make iron at as low a cost as any in the principality. The Staffordshire works have been in full and profitable operation; and more powerful machinery is in course of erection, which will increase their capabilities very materially. The directors congratulated the shareholders on the fact, that all their contracts, taken previous to the late advance, were already worked out, and that they were now enjoying the benefit of the high price of iron, in a degree, of which, perhaps, no other company could boast. The report on the galvanizing branch of the business was also very flattering. The reputation of galvanized iron has been established beyond doubt, and its superiority for roofing proved, by several contracts with the Government dock-yards and railway companies. Many hundred miles of galvanised wire had been already used for the electric telegraph, and many more are now preparing. For sheathing the material has answered perfectly; vessels exposed to the influence of the African sun have returned with the iron plates as sound and free from rust as when first put on, whilst the imitative, or spurious metal, has signally failed. Legal proceedings were stated to be in progress against the infringers of the patent, and a most confident expectation was entertained, that a very short time would suffice to inflict upon them their deserved punishment, for their invasion of the company's rights. The reading of the report gave general satisfaction. The accounts were then submitted and exhibited. Profits sufficient to allow a dividend of four per cent. for the half year had been realized, and left a surplus of about 2000*l.* Resolutions were then unanimously passed, adopting the report, approving the dividend of eight per cent. per annum; re-electing two directors, who went out by rotation; and giving thanks to the directors and managers. It was also resolved to issue the remaining 5000 shares in the company, thus increasing the paid up capital to 200,000*l.*—an extension by which, the CHAIRMAN remarked, the dividends would be more then doubled. The new shares were immediately subscribed for, and the provided amount would have been forthcoming, if necessary—at least, if we may judge from the eagerness manifested by those present to secure their proportion of the new issue.

CALLINGTON MINING COMPANY.

The annual general meeting of this company was held at the offices, Finsbury-square, on Friday, the 28th ult., RICHARD HODGSON, Esq., in the chair.—The report of the directors was read and adopted, from which it appeared that the favourable anticipations entertained respecting the property had been fully realised. Capt. Sprague, in company with the chairman and Mr. Johnson, had thoroughly inspected the mines, underground workings, &c., as also Capt. Phillips, whose report is as follows:—

March 20.—In presenting you a report of our proceedings through the past year, I beg to say, that our principal surface operations have been the fixing a railroad from the north to the south mine, for the convenience of bringing all the work on the same floors; in order to economise the dressing expenses, another road has been fixed for taking the halvans to a new 24-heads' stamping-mill, worked by a 40-feet water-wheel; these, with the necessary dressing-floors for the same, have been the principal objects. In the underground department, our particular attention has been directed to one point—viz., the communication of both mines at the sixty fathom level; this very important object we expect to carry out in the next three months, when a great benefit will be felt from the thorough ventilation of the mines, for the want of which we are suffering to a considerable extent. The workings have been extended in the following manner at the north mine:—

The 40 fathom level has been driven south			.....	57 fms.	4 ft. 2 in.
"	50	ditto	ditto	20	4 10
"	60	ditto	ditto	61	2 6
"	70 fm. cross-cut (5 fms. 3 ft. 6 in.)		.....	59	1 11
"	80 fathom level has been driven south		.....	53	2 5
The engine-shaft has been sunk			.....	18	0 0

now down to a ninety fathom level. Different winzes have also been sunk, in order to lay open the ground to set on tribute to a better advantage, and as well to keep up the best ventilation that we possibly could. In the forty and fifty fathom levels the lode has been more or less productive, in some places small, but rich bunches of silver-lead ores have been found; some of the pitches in these levels have given very good returns, and great part of the ground will work at a high tribute. In the sixty fathom level we have gone over more than 100 fathoms of valuable tribute ground. In the levels below this we still find an improved state of things—iron pyrites not being so prevalent as in the last-mentioned level, the bottom, or eighty fathom level, showing itself in a very striking manner—the present end being worth 20*l.* per fathom, in ground that will pay for driving at 2*l.* per fathom. At this shaft—viz., north engine—the lode underlies twice as fast as what it does generally through the mine; from this shaft to the south of the contra and copper lodes, now more than fifty fathoms south of the said shaft, the lode traverses a soft channel of clay slate, the matrix of the same being prian and branches of the surrounding rock; the lead is also found to be richer in silver; for the next fifty fathoms the rock is much more compact, carbonate of iron being mostly found with the lead. On the different copper lodes we have driven about 100 fathoms. Our prospects on what is called the contra lode, bearing 25 deg. to the west of south, promises an ample remuneration, for, more than this, we have driven through ten fathoms of orey ground, and find an improvement taking place as we are extending west; the average size is three and a half feet, the leader carrying the ore, being from twelve to eighteen inches big, composed of a congenial soft spar, with chlorite and black jack, worth at present half a ton of ore per fathom, driving at 3*l.* I am inclined to think the copper lode seen in the levels above has formed a junction with this, but the south end has not been driven far enough to prove it.

At the south mine, the 40 fathom level has been driven south			....	14 fms.	1 ft. 0 in.
Ditto	50	ditto	ditto	12	4 11
Ditto	60	ditto	north	57	0 3
Ditto	70	ditto	ditto	39	3 1
Ditto	80	ditto	ditto	52	4 9
Ditto	ditto	ditto	south	27	1 4
Ditto	90	ditto	north	32	5 6
Ditto	ditto	ditto	south	15	1 4
Johnson's engine-shaft has been sunk			.....	17	4 3

At present we are cross-cutting towards the lode at the 100 fathom level; such winzes have also been sunk as we have found requisite. In the sixty fathom level we have driven through a rich lode for several fathoms; the backs are all entire, being not only willing, but anxious, to communicate the mines before setting any ground in this part on tribute, so that no obstacle should be placed in the way of forwarding this most desirable object. In the seventy fathom level all the ground we have driven through will work, some at a low, the rest at a moderate, tribute. The eighty fathom level shows a considerable improvement from the level above, and we find the ninety fathom level with prospects equally good; the ground is much harder than what it was in the shallow levels; the lode is also compact, and lead more concentrated than before this change in the ground, not injuring the lode in the least respect. It is now one year and nine months since the water was forked at the north mine, and one year and two months since the same was done at the south mine. You are aware of the state the mines were left in by the former company, and that it would require some time to bring them into a proper and profitable state of working; this, as far as regards the silver-lead lode, I am happy to say, has been accomplished, so that our prospects for the future are much brighter than any the mine has hitherto seen. Messrs. Hodgson and Johnson have lately visited us, and, after examining the surface operations, dressing-floors, &c., and then going underground, and seeing the appearances of the lodes in the different levels, feel with myself perfectly satisfied that the approaching year will show the shareholders that the property in which their capital has been invested is of value and importance. J. T. PHILLIPS.

By the statement of accounts, it appeared that the cost of working from the 1st February to 31st December, 1844, had amounted to 13,308*l.* 11s. 2d., and other incidental disbursements 470*l.* 2s.—making a total expenditure of 13,778*l.* 13s. 2d. The sale of ores had realised 8361*l.* 8s. 5d., and this, coupled with the amount received on calls, produced a total receipt of 14,228*l.* 8s. 5d., which, with the balance previously against them, made a total of 16,592*l.* 6s. 4d.—leaving a present balance against the company of 2363*l.* 17s. 11d. Since the 31st of December, 1844, the expenses had amounted to 4868*l.* 6s. 8d., including the debit balance of 2363*l.* 17s. 11d.—while the receipts had been, by sale of ores 2463*l.* 3s. 6d., and by calls on shares 2018*l.*—leaving a debit balance still against the company of 387*l.* 3s. 2d.—Mr. P. N. JOHNSON (the manager of the mines) attended, and stated that his former expressed opinion of the silver-lead lode becoming rich in depth was fully borne out; that most of those lodes which had an east and west bearing acted as feeders to the north and south lode, and that, contra, the copper lode was promising to become very productive, without injuring, but rather keeping up, the mineralised character of the silver-lead.—Mr. CHIPPENDALE asked Mr. Johnson whether there was an additional quantity of ore in sight to what there was at last meeting?—which he (Mr. J.) answered by saying, that the bottom levels were now leaving much richer tribute ground, and that more ore ground had been discovered than taken away, but that they were waiting the communication of the sixty fathom level from the north to south mine, so as to enable them to set the ground on tribute to better advantage.—A PROPRIETOR asked whether the intended operation of smelting by the Tamar Company would affect the value of the ore?—Mr. STAINSBY replied, that, as the Tamar Smelting Company would become bidders for the parcels, he hoped a better and more uniform price would be obtained, more particularly on account of the contiguity of works, and the ore being a good mixture for the ores of the Tamar Mines.—After a vote of thanks to the chairman, the meeting separated.

GREAT WHEAL MARTHA MINING ASSOCIATION.

A special meeting of this company was held at their offices, Winchester-house, on Monday, the 31st ult., JOHN BRIGHTMAN, Esq., in the chair.

The SECRETARY having read the minutes of the last day's meeting, presented the directors' report, which affirmed the statements contained in that of Capts. Prince and Penaluna, which is appended.

Mr. JOHNSON (the manager) then read a report he had drawn up for the information of the company, respecting the present position and prospects of the mine, but which, like that of the directors, was merely an echo of the captains' report.

Mr. JOHNSON observed, that he had visited the mines within the last three weeks, and he certainly thought the most sanguine anticipations of success were fully warranted by the present appearance of the works. He had brought up some specimens of the cross-course west, which, having been assayed, proved of the rarest quality. The unparalleled quantity of 22½ per cent. of copper had been produced from it, and from the direction of the level corresponding with the celebrated Wheal Maria lode the most sanguine results might fairly be anticipated. Specimens he had also brought up from other levels in the mine, some of which had been considered as most unpromising, but had proved, on assay, to contain 8½ per cent. of copper; and Mr. Sargeant (the purser) had left on Saturday, and brought specimens of ore even still more rich—in fact, some being almost solid metal.

The SECRETARY read the report of Captains Prince and Penaluna:—

March 29.—In handing you an annual report of these mines, we beg to say, that, in consequence of not having had any additional machinery or erections during the past year, we do not consider it necessary to trouble you with a recapitulation of what has been done at the surface, in order to carry on the underground workings, to which we beg to call your attention. For a particular account of the wheels, whims, crusher, stamping-mills, buildings, and other erections, &c., please see Captain Penaluna's Report of April 27, 1844. The different lodes have been opened on in the following manner—viz.:

OLD MINE.				Fms.	ft.	in.
New adit has been extended		north	.....	13	5	0
Old ditto		ditto	.....	4	5	0
Forty fathom level	"	east	.....	14	0	0
Forty	"	west	.....	14	5	6
Forty lead lode	"	north	.....	16	4	0
Fifty copper lode	"	east	.....	12	4	9
Sixty	"	west	.....	17	0	0
Sixty	"	east	.....	15	4	6
Sixty	"	west stopes	.....	6	0	0
Seventy	"	ditto	.....	13	2	3
Sinking sump shaft below the seventy			.....	9	2	3
Winzes			.....	9	4	6
NEW MINE.						
The adit has been extended		north	.....	13	5	0
Ten fathom level	"	east	.....	28	2	6
Ten	"	west	.....	24	0	6
Twenty	"	east	.....	12	4	0
Twenty	"	west	.....	12	5	0
Ten cross-cut	"	south	.....	7	1	6
Twenty cross-cut	"	ditto	.....	2	0	0
Thomas's shaft sunk			.....	25	0	0
Ryall's shaft ditto			.....	12	0	0
Adit in the valley extended north			.....	50	0	0
On course of lode extended east and west			.....	44	0	0
Serjeant's shaft sunk			.....	6	0	0
Fursey ball ditto			.....	6	4	0
Barnlight adit extended west			.....	16	3	0
Wheal Sheba adit extended west			.....	16	0	0

We have found the Wheal Martha lode uniformly large, and strongly mineralised, yet we regret that it has not hitherto produced the quantity of ore which the indications led many to expect. The quality, too, has been inferior, owing to an abundance of cupreous iron pyrites, mechanically combined with the copper, which is usually found at a greater depth, in a matrix, the composition of which forms the base of this lode. In the forty east the lode is about ten feet wide, consisting of much iron pyrites, with spots of yellow copper ore disseminated in hornstone and quartz. The lode in the forty west is split into two parts, both of which are large, containing spots of ore in a lightish grey hornstone. We are inclined to believe, that these parts will be found united in extending a level west, and at which point the lode is likely to be productive; we would, consequently, recommend driving in this direction, especially as a north and south lode has been opened on in the sett, which will intersect Wheal Martha lode west of the present workings; this lode contains a fine gossan, singed with phosphate of lead and muriate of silver—favourable indications at a depth of only seven feet below the surface. The lead lode, on which a level has been extended sixteen fathoms north, is about one foot wide, containing a little ore; at the point of this level a lode was cut through, and driven on a few fathoms east and west; it is large, but does not contain anything worthy of further notice. The fifty east and west, as you are aware, produced a great deal of ore during the last working, but the lode at present, although large, and containing an abundance of mundic, with a little copper, is not rich. As regards the sixty, we were quite right respecting a part of the lode standing on the south, in the eastern level, which is now cut through; it is about four feet wide, containing the same ingredients as in the level above. We propose driving this level a little further, in consequence of a large stream of water issuing from the lode. The stopes in the sixty west are producing saving work; it is our intention to sink in this shoot of ore, to ascertain its character and dip; the lode here is composed of a little hornstone, with iron and copper pyrites in fluate of lime; the point of the level consists of hornstone and copper ore, disseminated in a lode six feet wide. In the seventy fathom level the size of the lode is eight feet wide, composed of hornstone and decomposed felspar on the foot wall; disintegrated iron pyrites, with spots of copper pyrites of good quality; underlay, two and a half feet in a fathom; bearing, 26 deg. north of west. In the engine-shaft, below this level, the lode is very large, with a part of it standing on the north; it is composed principally of hornstone, quartz, and compact chlorite; the lode, however, in the bottom of the shaft, contains a great deal of arsenical pyrites, with more copper and spots of fluate of lime—ground hard; the north part will be cut into immediately on our reaching the eighty. The adit, midway from Wheal Martha engine to Thomas's shaft, has been extended north fifty fathoms—a lode cut through, and explored east and west about fourteen fathoms; it bears about 30 deg. north of west and south of east, and, judging from its composition, we have no hesitation in saying, it is the Wheal Martha lode; it is composed of a brownish hornstone, with mundic and spots of yellow copper ore of good quality.

New Mine.—The ground here and further east is certainly the most favourable to produce copper of any in this sett (*see* report, Dec. 2, 1844); the lode is much more strongly mineralised in this direction, and traverses a rock exceedingly favourable to the production of minerals. The ten fathom level has been extended east and west of Thomas's shaft about fifty-two fathoms; the lode is very large from point to point; the eastern part is five feet wide, consisting of a brownish hornstone, decomposed felspar, with iron and copper pyrites; the rock on both sides of the lode is a lightishblue, soft and decomposing talcose slate, differing in no respect from the strata and rock contiguous to Wheal Maria lode. The western level has been driven through orey ground for several fathoms, the lode having gradually improved till we reached a shoot of ore, producing from 9½ to 23½ per cent. of copper; an indistinct cross-course disordered the lode for the present, but it continued its size and bearing with the same tabular structure, in the joints of which may be seen black oxide of copper of superior quality, whilst the more compact parts contain copper pyrites, producing 8½ per cent of copper; we have commenced sinking a winze in the shoot of ore, and expect to be able to report favourably of it in our next. The twenty west is about five fathoms short of having reached the orey ground seen in the level above; the end, however, is evidently improving; the lode in the east end is about five feet wide, consisting of a brownish hornstone and quartz, with a little copper ore; the rock here, too, has a very inviting appearance; the surface water having very considerably decreased during the last fortnight, the working in this level have been retarded; we hope, however, to have sufficient to extend the level at least in a line with the shoot of ore, to which we have just adverted. The lode at Wheal Sheba presents the same appearances, and contains the same ingredients as it does in other parts. The lode at Barnlight is about two and a half feet wide, is regular, with well defined walls; it contains copper of good quality, with spots of oxide of tin, and is more quartzose than that of Wheal Martha. We are sorry that, in consequence of making an alteration in the ore-floors, for the more effectual method of dressing the ore, we shall not be able to get a parcel prepared for market in time for the next sampling; about thirty tons are already brought to surface. We have carefully inspected and taken the regular bearing of Wheal Maria lode at the twenty and twenty-three fathom levels for at least sixty fathoms in length, and have seen it at the surface for upwards of 400 fathoms, and we cannot but come to the conclusion that it does pass through the whole length of Wheal Martha sett, the geological formation and position of which is as favourable to the production of copper as any ground in this neighbourhood; we do not pretend to say that this most extraordinary lode will not be found to have deviated from its line of bearing, or that it will produce ore wherever it may be opened on, but it must have been thrown out of its course 300 fathoms north and south, to get out of Wheal Martha sett, which is not at all probable. Several pits have been opened, and lodes discovered, but the main lode is yet to be found, the gossan of which differs in its chemical composition from any we have seen in this district.

Mr. JOHNSON then read a letter from Mr. West, on the subject of the erection of an engine, which the company considered indispensable for the working of the mine. He (Mr. Johnson) observed, that he had thought it right to show the meeting that letter, and to state the absolute necessity there was for the engine, in order that, if a call should in the course of the year be made on the proprietors to defray the cost of its erection, it might not come upon them unexpectedly.—Mr. RICHARD THOMAS had hoped that the returns of the mine, which had been so favourably spoken of by Mr. Johnson, would be amply sufficient to pay the expenses of the engine; he also considered that the construction of the engine should be effected by contract, as, by competition, he doubted not they would get the work done as well, with far greater economy.—Mr. SARGEANT observed, that he certainly did entertain the strongest hopes that the lodes into which they had now commenced cutting would yield produce enough to pay the expenses of the engine; the cross-courses in the west were of the finest nature, and, for himself, he did not entertain a doubt but that Wheal Martha would soon become a second Wheal Maria, which latter, at a cost of a few hundreds, had now in sight more than 20,000*l.*—Mr. JOHNSON had merely mentioned the circumstance, in order that if their sanguine anticipations should not be realised, the proprietors might not reprove him with misleading them, especially as, in such a contingency, calls must be made to meet the cost of the engine.—A vote of thanks having been passed to the chairman, the meeting separated.

VICTORIA MINING COMPANY.

A meeting of the adventurers was held at Webb's Hotel, Liskeard, on Wednesday last. There was a numerous assemblage of proprietors present, by whom it was unanimously agreed to erect a wheel immediately, and sink, and a call of 1*l.* per share was accordingly made.—The following report was read by Mr. T. WEBB (the purser):—

This sett is about 500 fathoms in length on the course of the lode, and 313 fathoms wide. There are eight east and west lodes—five of a large size, averaging three feet wide, containing soft spar, fine gossan, and prian, and of a very promising appearance, such as is not to be seen elsewhere in this mining district. On this we are driving to intersect the east and west lodes, at a cost of from 10s. to 20s. per fathom, the ground standing without timber. An engine-shaft could be sunk at a comparatively small expense, to prove at the same time the east and west lodes, and the north and south lodes. We are driving also a deep adit northward, 150 fathoms further west, in the centre of the sett, which will intersect some of the east and west lodes at a depth of more than fifty fathoms. Two branches are already cut, containing finer-spar and fine yellow ore. There is an abundance of water, both winter and summer, to put the mine to a great depth—Dranes River running quite at the tail of the adit. We have a quantity of good building stone sufficient for whatever erections may be necessary, together with other advantages rarely to be met with. In the opinion of miners generally, this bids fair to be one of the best mining speculations in this district.

VAN DIEMAN'S LAND COMPANY.

The annual meeting of this company took place on Monday, the 31st ult., at the office of the company, in Old Broad-street, City.

The chair was taken by JOHN CATTLEY, Esq., who regretted the retirement of their late governor, which was the cause of his presiding on the occasion. The directors had waited as long as possible, in hopes of getting the latest dispatches, but the state of things in the colony had passed its worst, and great improvement might now be expected.

Mr. HOWELL (the secretary) read the minutes of the former meeting, which were confirmed, and then the report of the directors, which was to the effect, that the Government survey would, probably, be completed within three months from the 13th May, 1844, and an engagement had been entered into with the Government for the formation of a road from the settled districts to Emer Bay, on which, and in constructing bridges on the Mersey and Forth, about 900 convicts were engaged, two-thirds of the expense being defrayed by the Government, and one-third by the company. The untoward circumstances in which the colony had been placed, by the depressed state of the markets, had caused the drafts of the chief agent to amount to no less than 11,177*l.* 3s. 8d. for the year 1843; and for the subsequent nine months, ending September, 1844, to 8,956*l.*, to meet which the directors were reluctantly compelled to make calls on the proprietors, on the 28th of October last, and on the 6th instant. But this accommodation had enabled the tenants to overcome their difficulties, and now to go on effecting improvements, far more than equivalent to the credit given by the company. Produce had been delivered to the chief agent up to the 7th October last by the tenants, in part payment, which, he calculated, would realize 5,000*l.* Large quantities of forest land had been cleared and cultivated. The clip of wool, for 1843, was 84 bales, which sold at good prices. From the fertility of the lands, the growth of flax was recommended by Mr. Cannon, to save the tenants from the effects of the depression of the colonial markets. The directors, however, thought that too many hands were required for that operation, for the company to engage in it at present. The chief agent had been instructed to effect every possible reduction, so that his drafts for the year might not exceed 5000*l.* The directors, in conclusion, believed that the change for the better was now approaching, and that, as the healthiness of the climate, and its fertility became more known, a greater number of small capitalists would find their way to the company's lands. The balance-sheets were on the table, for the inspection of the proprietors.

The CHAIRMAN said, the live stocks of the company held still their high reputation, though the sales had fallen off. The population on the company's land in 1843 was 711, including women and children; and the land at the last dates under cultivation was 2,992 acres. To 300 of the 900 men employed on the roads, rations were supplied by this company. There was about 9,000*l.* due from the tenantry, which was secured upon the lands; and, of the 350,000 acres of the company's lands, 250,000 acres were worth 1*l.* per acre, exclusive of the improvements, which, with available assets to the amount of 40,000*l.*, gave a value of real and moveable property of 290,000*l.*—Mr. WILSON moved the adoption of the report, and thought with the chairman that there were symptoms of an improvement in the colony.—A PROPRIETOR seconded the motion, which was passed unanimously.—In reply to a proprietor, the CHAIRMAN said, that no call would be made this year.

Mr. WHITCOMB objected to going on advancing money on the colony, when it brought no return. He opposed the continuance of the salary to the directors, and the medical staff being kept up in the colony, with a view to diminish the expenditure.—The CHAIRMAN said, the sum of 300*l.* was awarded to the directors by the proprietors themselves, and not until they had worked fourteen or fifteen years without salary. As to doing away with the medical staff, he thought one of the gentlemen might probably be dispensed with; but he would question its expediency, as some of the tenanted spots were forty miles apart, and one of the chief inducements to emigrants going there was the knowledge of there being medical aid in cases of necessity.

Mr. Savage, Mr. Hichens, and others, thought such minor outlays were not worthy of discussion.—The CHAIRMAN said, the directors would have the greatest regard to economy; for they held, with their friends, 6,000 out of the 10,000 shares.—Fifteen shares belonging to Mr. D. Salomons, and five to Mr. Borradaile, were then declared forfeited.

The Chairman was unanimously elected governor of the company, in the place of W. Burnie, Esq., resigned, and E. Marshall, Esq., was elected deputy-governor.

The gentlemen who retired by rotation were Capel Cure, Samuel Mills, F. Ladbrooke, B. Pearse, and G. Rougement, Esqrs., who were re-elected directors; C. Pearse and W. R. Brown, Esqrs., were elected new directors; and C. R. Lucas, W. Wilkinson, and John Baber, Esqrs., were elected the auditors of the company.—A vote of thanks was then moved to the chairman and directors, which was seconded by Mr. SAVAGE, and passed unanimously, when the meeting separated.

ALLEGED ILLEGAL MINERAL WORKING.—At the late Liverpool assizes, an action was brought by the proprietors of a coal mine, called the Heywood-hall Estate, and the Captain Fold Colliery, near Rochdale, adjoining a colliery belonging to the defendant, Mr. Dearden, for injury sustained by them, in consequence of the alleged improper working of the defendant's mine, from which a great quantity of water flowed into the works of the plaintiffs. In 1841, the latter had previously brought an action, and recovered compensation; but the nuisance being, as alleged, still continued, this further action had been brought. It was finally arranged, that a special verdict should be taken upon admissions on both sides, the amount of damages being referred. The admissions were to the effect, that the plaintiffs were the lessees of the coal mine in question, under the Heywood-hall Estate, comprising the land between the Captain Fold Colliery, and the opposite side of the river Ronch; that before the lease of the mine, granted to the plaintiffs in 1839, defendant had trespassed into part of the Heywood-hall Estate, comprised in that lease, and got some coal out of it, and then, having removed the pillars supporting the roof, it partially fell in, and the remaining space filled with water: that, in 1840, the plaintiffs drove a level in that direction, to within three yards of their own boundary, and that the water, collected in the defendant's mine, flowed through the aperture, from which he had taken the coal, into the works of the plaintiffs, and that the defendant had not done anything to prevent it, and had not pumped the water out of his own mine.

MANUFACTURE OF IRON.—Most of our scientific readers are aware, that, at the last annual meeting of the British Association for the Advancement of Science, the council of that body granted 50*l.* to Dr. Lyon Playfair and Dr. Bunsen, of Marburg, for the purpose of enabling them to make certain experiments, with a view to discover the chemical theory of the manufacture of iron. For several months past, these two eminent chemists have been pursuing their interesting investigations separately, with what result the report of their labours will, no doubt, in due time, furnish ample information to the public. In order to compare notes with his colleague in this inquiry, and also for the purpose of visiting the iron districts of this country, Dr. Bunsen came to Manchester a few days ago, and is now on a visit to Staffordshire, accompanied by Dr. Playfair. Dr. Bunsen, who is Professor of Chemistry in the University of Marburg, has already attained no ordinary rank in the science to which he has devoted his talents: indeed, Berzelius speaks of him as one who will yet be named among the greatest chemists of Europe. Among many important discoveries attributed to him, one of the most useful perhaps is, that of an antidote for the poisonous effects of arsenic, which he found in the hydrated peroxide of iron, a simple preparation, and one which ought to have a place on the shelves of every druggist in the kingdom. In Germany, if we are rightly informed, every druggist and apothecary who sells the poison is bound by law also to sell the antidote. —*Manchester Guardian.*

Mining Correspondence.

ENGLISH MINES.

WHEAL BREWER MINING COMPANY.

April 2.—An account held on the mine of profit and loss for Jan. & Feb.:—

Ores sold			£1041	4	9
Dues 1-13th			69	8	4— 971 16 5
Expenses					388 14 5
					£583 2 0
West Trethellan adventurers					12 0 0

Showing a profit of 595*l.* 2*s.*; to which add balance from last acc., 429*l.* 17*s.* 2*d.*—making a total of 1024*l.* 19*s.* 2*d.*; from which deduct 600*l.* for a dividend of 5*l.* per 1-120th share, leaves a balance to next account of 424*l.* 19*s.* 2*d.*

HOLMBUSH MINING COMPANY.

March 31.—In the 120 fathom level, east and west of the cross-cut, the lode is nine inches wide, and worth about 5*l.* per fathom. In the 110 fathom level, west of Hitchins's shaft, the lode is twenty inches wide, and worth 18*l.* per fathom; in the stopes in the back of this level, east and west of Michell's winze, the lode is twenty inches wide, and worth 20*l.* per fathom; in the stopes west of Lobb's winze the lode is twenty inches wide, and worth 28*l.* per fathom; in the stopes west of the sump winze the lode is sixteen inches wide, and worth 18*l.* per fathom; in the stopes west of Goldsworthy's winze the lode is one foot wide, and worth 12*l.* per fathom. In the 100 fathom level, west of Hitchins's shaft, the lode is one foot wide, and worth 20*l.* per fathom; at this level, east of Wall's shaft, the lode is small and poor; in the stopes east and west of the south cross-cut the lode is eighteen inches wide, and worth 30*l.* per fathom; in the winze sinking below this level the lode is eighteen inches wide, and worth 28*l.* per fathom. In the ninety fathom level, west of Hitchins's shaft, the lode is nine inches wide, producing good stones of ore; in the stopes east of Pearce's winze the lode is sixteen inches wide, and worth 25*l.* per fathom. In the stopes in the back of the eighty fathom level, west of the south cross-cut, the lode is one foot wide, and worth 10*l.* per fathom; in the rise in the back of this level the lode is ten inches wide, producing a little ore. We weighed at quay, on Friday last, February ore, 196 tons 15 cwt., and sampled March ores, computed 198 tons. T. Richards.

BEDFORD UNITED MINING COMPANY.

March 31.—At Wheal Marquis we expect to cut the lode in the 70 fm. level cross-cut south by the end of the present week. The lode in the 58 fm. level east is two feet wide, composed of spar, mundic, and ore—good saving work; and in this level west the lode is two feet wide, composed also of spar, mundic, and ore. The lode in the winze, in the bottom of the forty-seven fathom level east, is two and a half feet wide, composed of spar, mundic, and ore—and worth 16*l.* per fathom. In the forty-seven fathom level west the lode is about twenty inches wide, composed of spar, mundic, intermixed with good ore; in the deep adit level coming east from the old mine, there is no alteration. At Ding-Dong the lode in Thomas's engine-shaft is two feet wide, composed of spar, mundic, and ore; and in the twelve fathom level east the lode is two feet wide, composed of spar, mundic, and ore—at both points of operations kindly. At Wheal Tavistock the lode in Phillips's engine-shaft (now 23 fms. 3 ft. from surface) is about eighteen inches wide, composed of gossan, spar, and mundic—a very kindly lode. At Delve's Kitchen we are still clearing the adit level in the old workings, the attle and stuff from which must have come from a strong kindly lode. We weighed on Friday last, at Morwelham, January ores, 110 tons 19 cwt. 2 qrs., and sampled February ores, computed 109 tons. We have great pleasure in acquainting you, that, in addition to the many promising lodes before known, as being within the limits of this extensive sett, we have discovered, in the south part of the sett, two other exceedingly promising lodes, in beautiful killas ground, and carrying strong gossans on the back. J. Phillips.

TAMAR SILVER-LEAD MINING COMPANY.

March 31.—In the 145 fathom level the lode is six inches wide, composed of mundic and capel. In the 135 fathom level the lode is nine inches wide, capel and ore, saving work, though coarse in quality. In the 125 fathom level the lode is eighteen inches wide, can and ore—good work. In the 115 fathom level the lode is one foot wide, composed of capel and can, with strings of ore. The 105 fathom level is still in slidy ground, and unproductive. In the ninety-five fathom level the lode is six inches wide, capel and ore—promising work. In the eighty-five fathom level the lode is one foot wide, producing good stones of ore. In the seventy-five fathom level the lode is again making its appearance after passing through about four fathoms of slidy ground. In the sixty-five fathom level the lode is two feet wide, carrying two small branches of ore. In the winze rising in the back of the fifty-five fathom level the lode is small and poor. The incline plane shaft is sunk fourteen fathoms below the eighty-five fathom level on the incline. We hope to sample to-morrow, the 1st of April, 125 tons of rich silver-lead ore. At the north mine, I am glad to say, our prospects are improved. In the fifty fathom level, north of the shaft, the lode is two feet wide, composed of capel, can, and ore; rich work as the end is now, the lode will turn out a ton of ore to a fathom of ground; we might with safety say, this end is worth 20*l.* per fathom. At Wheal Haucock the sumpmen are engaged cutting a platt just below the hard floor of ground at the thirty-seven fathom level. In the cross cut at the twenty-seven fathom level the ground appears to be changing for the better. James Sprague.

COOK'S KITCHEN MINE.

March 29.—In presenting my yearly report, I will briefly mention what has been done here in the past twelve months, by which you will perceive that a great alteration for the better has taken place in that period. On the North Tincroft lode we have sunk the eastern shaft sixteen fathoms, and, for that depth, the average size of the lode has been about five feet, and the price of ores raised from it about 3*l.* per ton; but we are not yet deep enough to reap the full advantages of our outlay on this part of the mine. We are working the bottom of the fifty on tribute; the lode is five feet wide, and worth 12*l.* per fathom. We sampled last month from this pitch thirty-five tons, which produced 4¾ per cent. In stoping the bottom of the sixty fathom level, at the eastern shaft, this lode appears to be divided, as it was in Tincroft, and the south part, on which we are working, seems with us, as with them, to be the most productive; it is three feet wide, nearly perpendicular, and worth 10*l.* per fathom. We sampled last time from these stopes sixteen tons of ore, making a produce of 6 per cent. We expect almost daily to cut the lode in the cross-cut, at the seventy fathom level, but the underlay may not be so great as in the levels above, in which case we shall have somewhat further to drive. On Eudey's lode we have sunk the new east shaft nearly to the 100 fathom level, the last fifteen fathoms through very good tin ground—the average size of the lode being five feet. We have driven the eighty-two ten fathoms east at this shaft, and we are now stoping the bottom, where the lode is six feet wide, and worth 14*l.* per fathom for tin. The cross-cut which we have been driving from Chapple's lode, at the ninety-two, to drain and ventilate this part of the mine, is expected to be holed daily, which will also enable us to set tribute ground in this part of the mine, which has long been lying idle, from the difficulty of drawing the stuff, and also to resume sinking the new east shaft. We shall continue to sink this shaft with all speed as soon as practicable, in order to work Chapple's and Eudey's lodes to the best advantage, the prospects in these lodes being most encouraging. On Chapple's lode we have driven the 170 fathom level twenty-five fathoms east in the last six months, and have sunk a winze from the 160 to the 170 in very productive ground, which is now working on tribute at 6*s.* 8*d.* in the 1*l.* We have also commenced driving the 160 fathom level, west of Chapple's shaft, where the lode at present is six feet wide, and worth 40*l.* per fathom for tin; the ground is yet untouched between this and the boundary under the 111, on this part of the lode—the 140, which is the only level driven so far west, being on the north part; the advantages of this discovery, therefore, will appear clear to you, without any remarks of mine. We are driving the 140 fathom level east, and are carrying a part of the lode four feet wide, but the whole is much larger; it is not rich, however, being worth 5*l.* per fathom. On Dunkin's lode we have driven the 170 about fifteen fathoms west of the south sump shaft, and have fifteen fathoms further to communicate with the winze sunk under the 160, in which we had a very good lode; this communication will enable us to work the ground above on a favourable tribute. The 160 has been driven about twenty-five fathoms west of the winze above-mentioned, and the back is now working on tribute at 6*s.* 8*d.* in the 1*l.* for ore. I am of opinion, from the improvement on this lode, from the 140 to the 160, that it is likely to prove very productive in depth. In the 140 we have cut the lode west of the cross-course, which I mentioned last week, and find it four feet wide, underlaying about two feet in a fathom south, producing very good stones of ore and tin; but, as we are yet not more than two feet from the cross-course, I cannot say what it is worth per fathom until next week. We have been driving a cross-cut south, at the twenty-nine fathom level, to intersect the new south lode, and expected to have fallen in with it before this; but, probably, the elvan-course through which we are now driving has somewhat altered the direction of the lode. We have sunk a shaft on the Druid lode (the same which has been so productive in Carn Brea Mines) about thirteen fathoms from surface; the water prevented us during the winter from proceeding deeper, but, by an arrangement entered into with the Tincroft adventurers, an adit will be cleared into this part of the mine, seventeen fathoms under our present workings. We have also sunk a shaft on a caunter lode, fifteen fathoms on the underlay; the lode has been about six feet wide, and produced excellent work for tin, but we were obliged to suspend the shaft, on account of the water, and set the ground east and west on tribute; the men are getting good wages at 10*s.* in the 1*l.*, and we are now bringing out a cross-cut south from the Druids' shaft, which will intersect this lode thirty fathoms further west, in about eight or nine fathoms driving. The adit in the Druids' lode, when cleared, will, with only twenty fathoms of cross-cut, drain this caunter lode to the depth of thirty fathoms from surface. I beg to congratulate the shareholders on the improved prospects of the mine, which will fully warrant the proposed outlay on machinery for returning the large quantities of tin stuff we are now raising, and which is accumulating at the surface for want of stamping power. A. Eudey.

CORNUBIAN MINING COMPANY.

March 31.—There is no alteration in the eighty-six fathom level, going west of Murray's engine-shaft, different from what was stated in last week's report; in the east end, at that level, Chiverton lode is large, from two to three feet wide, yielding rich stones of lead. The pitches working at the seventy-eight fathom level, west of said shaft, are producing a fair quantity of work; the one working by eight men on the north lode (back and bottom of the seventy fathom level) continues to look well; other pitches are much the same as heretofore noticed. The computed thirty tons of silver-lead ores, sampled the 20th inst., is purchased at 14*l.* per ton (21 cwts.). R. Rowe.

UNITED HILLS MINING COMPANY.

April 1.—In the eighty fathom level, eastern end, the lode is five feet wide, two and a half on the north part good ore; in the western end the lode is three and a half feet wide, producing but a small quantity of ore. In the seventy fathom level, eastern end, the lode is three and a half feet wide, fourteen inches on the north part ore of fair quality; in the western end the lode is three feet wide, one foot on the south part ore of average quality; we are still sinking the winze below this level in the country, to the north of the lode. In the sixty fathom level, eastern end, the lode is three feet wide, two feet ore of good quality; west of James's the lode is three and a half feet wide, two feet ore of average quality; the lode in the winze is three and a half feet wide, two and a half feet good ore. No alteration in the fifty fathom level for the past week. In the forty fathom level, west of James's, the lode is four feet wide, two feet good ore. In the thirty fathom level the lode is eighteen inches wide, producing but a small quantity of ore. In the ten fathom level the lode is two feet wide, producing some stones of ore. At Wheal Sparrow, in the fifty fathom level, eastern end, the lode is three and a half feet wide, with but little ore; in the western end the lode is two feet wide, producing some good stones of ore, looking promising; in the cross-cut the ground is still favourable for driving. In the forty fathom level, eastern end, the lode is eighteen inches wide, poor at present; in the western end the lode is eighteen inches wide, producing but little ore. In the thirty fathom level the lode is two and a half feet wide, fifteen inches on the north part ore of average quality. T. Trevenen. R. Williams.

WHEAL MARY MINING COMPANY.

Calstock, April 2.—In handing you a report of this mine, I beg to state, that our prospects are gradually improving since my last. In the adit level, the part of the lode we are carrying is four feet wide, composed of spar, flookan, and white iron, producing good stones of yellow and black oxide of copper ore; and it is the opinion of every mining agent, as well as myself, that it will turn out an abundance of ore in depth. I have also to inform you, that we have commenced sinking an engine-shaft (called Hebard's shaft), and, by so doing, at the depth of seventeen feet, we intersected a lode underlaying north (the middle lode having a south underlay), which will greatly enhance, if not double, the value of the mine, as the north and south lodes will form a junction at a depth of about thirty fathoms, when we may then expect a speedy return. William Williams.

TRELEIGH CONSOLS MINING COMPANY.

March 28.—In the seventy, west of Good Fortune, the lode is two and a half feet wide, kindly, with stones of ore; in the seventy, east of ditto, the lode is two feet wide, not producing much ore. In the sixty, west of ditto, the lode is three and a half feet wide, worth 25*l.* per fathom; in the rise above the sixty east the lode is not taken down; we have eight feet more to hole to the fifty fathom level, which will open tribute ground. In the fifty, west of Symons's, the lode is two and a half feet wide, worth 10*l.* per fathom. In the forty-four, west of ditto, the lode is eighteen inches wide, and kindly, producing some ore. In the thirty-four, west of ditto, the lode is two feet wide, kindly, and producing stones of ore. In the twenty, west of ditto, the lode is two feet wide, with a promising appearance, and producing stones of ore; in the adit, west of ditto, the lode is one foot wide, favourable ground, but not producing any ore. In the fifty, west of Garden's, the end has produced some good ore of late—at present poor. Our pitwork is nearly ready, but I do not expect the engine will work till the middle of next month; we are doing all we can to forward it.
W. Richards. W. Symons.

CONSOLIDATED TRETOIL MINING COMPANY.

March 31.—The lode in the sixty fathom level, west of Henwood's shaft, is eighteen inches wide, producing some good ore; price for driving 7*l.* per fathom; the lode in the sixty fathom level, east of Henwood's shaft, is nine inches wide, producing a small quantity of ore; price for driving 6*l.* per fathom. The lode in the fifty fathom level, east of Henwood's shaft, is one foot wide, worth 2*l.* per fathom; price for driving 55*s.* per fathom—tribute, when set, 12*s.* in the 1*l.* The lode in the forty fathom level, east of Henwood's shaft, is ten inches wide, worth 2*l.* per fathom; price for driving 3*l.* per fathom—tribute, when set, 12*s.* in the 1*l.*
H. Williams. J. Morcom.

LEWIS MINING COMPANY.

March 25.—We beg to hand our report of the appearances and prospects of these mines, with a statement of the operations, from the commencement to the present time, and what we intend to do in future, both underground and at the surface. When we commenced working these mines in Hoblyn's land we fully expected the Wheal Providence lode would run through the sett quite distinct from others, but, being interrupted by a strong flookan cross-course, which has thrown it out of its regular course, we have not found it where we expected; but are now preparing flat rods to sink on it in the eastern part of the mines, where we have already sunk a shaft on its course, about twenty-three fathoms from the surface, beyond which we could not go without the aid of machinery. The lode in said shaft has a very promising appearance, producing occasionally good stones of copper ore, of the same character as the ores in Wheal Providence. In order to work Kutkey's lode beyond where left by the former workers, we were obliged to clean and secure the main adit for a considerable distance, at a great expense (about 400*l.*), cleared the engine and five other shafts to the adit, erected a forty-inch cylinder engine (new from the founders), which, when completed, cost about 1100*l.*; fixed pitwork, and drained the mines to the twenty-fathom level below the adit, at a further expense of 250*l.*; have since sunk engine-shaft twelve fathoms, in doing which we discovered a good branch of ore, apart from main lode, but inclining towards it in depth; we have driven to main lode at the thirty-two fathom level, where we find it course, though producing some stones of ore. We have driven on the lode in this part as follows—viz.:

32 east from Lewis engine-shaft			3 fm.	3 ft.	0 in.
32 west	ditto	ditto	2	0	0
20 east	ditto	ditto	25	5	0
20 west	ditto	ditto	24	0	0
10 „	ditto	ditto	4	4	0
Adit west	ditto	ditto	28	0	0
„ east	ditto	ditto	16	2	0
Sunk Kerras whim-shaft under adit			10	0	0

We have sunk the sump in Kerras whim shaft under adit to nearly the thirty-two fathom level; expect to hole to that level in a day or two, after which we intend to sink the engine-shaft below the thirty-two, and hope to find the branch of ore referred to, with the lode, before we get to the forty-two. The twenty east is unproductive; the twenty west is producing some ore and kindly; we have one pitch working in the back of the ten fathom level, at 12*s.* in the 1*l.* We are sinking a winze on north lode, under the adit, which is laying open ground that will work at 9*s.* or 10*s.* in the 1*l.* for tin. We have a great extent of ground on these lodes, and the ground is cheap to excavate, so that there are fair chances of success. At Treven we have driven an adit to cut a lode, sunk a shaft on same, and driven on the course of the said lode a great many fathoms. In this part the lode has a very promising appearance for copper ore; but we cannot expect much ore, being so shallow. Next summer we intend to prove the lode below the adit.

At Wheal Nutt we have cleared the adit for a great length on the course of the lode, cleared and secured several adit shafts, erected a thirty-three inch cylinder engine, fixed pitwork to the twenty fathom level, at a cost of about 1100*l.* for machinery, erections, &c.; sunk sump whim shaft from adit to the twenty fathom level; sunk copper ore shaft from the ten to the twenty fathom level; sunk tin shaft from the adit to the ten fathom level. We have driven the levels on the course of the lodes as follows—viz.:

10 fathom level east			11 fm.	3 ft.	6 in.	on north lode.
10	ditto	west	6	5	8	ditto
20	ditto	east	16	0	0	ditto
20	ditto	west	5	0	0	ditto
20	ditto	east	8	0	0	in. on south lode.

The ten fathom level end east is producing tin more than equal to the cost of driving, and laying open ground that will work at a moderate tribute; we have one pitch in the back of this level working by four men at 10*s.* from 20*s.* for tin; this lode appears to be losing the tin in depth, and at the twenty fathom level it has a very promising appearance for copper, producing occasionally some good work for copper. The twenty east on south lode is producing some good work for tin; the end will pay the cost of driving; we have two pitches working in the back of this level at 10*s.* from 20*s.* The ten fathom level end west, on north lode, is producing some good work for tin; the back and bottom of this level will work at 9*s.* or 10*s.* tribute. The twenty west has been producing some good work for tin; but at present the lode is disordered by cross branches of spar. We are now in course of sinking engine-shaft below the twenty, now down four fathoms; the lode, which is underlaying a little north, is left to stand to the north of shaft. From what we have so far seen of the north and south lodes, we have no hesitation in saying, that our prospects in this part of the mines are very cheering; but so far we have seen very little of the middle or main lode—the former workers having taken away nearly all the lode above the twenty fathom level, and how deep we cannot as yet ascertain; we find two lifts of wooden pumps fixed in winzes sunk on the course of the said lode. We are inclined to think, that this lode must have been by far the best, or the old men never could have been remunerated for putting the stuff to surface, taking all the disadvantages into account under which they must have laboured. We expect to see this lode at the thirty fathom level in two months from the present date. We have purchased an excellent wheel, 28 feet diameter, 2 feet over the breast, for 15*l.* 12*s.* 6*d.*; this we shall set up as soon as possible to stamp the tin stuff; we need not make any further comment on the appearances of this part of the mines, only to say, that we consider the prospects very encouraging indeed. The engines, pitwork, and other materials on the mines, are worth 2,600*l.* S. S. Noell. Peter Eddy.

HANSON MINING COMPANY.

March 31.—Our sumpmen are driving the fifty-four fathom level west at bottom of engine-shaft; the lode is in two branches, divided by a horse of killas, both branches full of mundic. The lode in the forty-four fathom level, east of engine-shaft, is eight inches wide. The lode in the thirty-one fathom level, east of Garden shaft, is fourteen inches wide—a kindly lode. The Garden shaft, sinking under the thirty-one fathom level, is now two fathoms below that level; the lode is sixteen inches wide, with some good ore. At Treza we are going on with all possible speed, and shall be ready for the masons to commence in a day or two. Z. Williams.

WEST WHEAL JEWEL MINING ASSOCIATION.

March 31.—The 100 east, on Wheal Jewel lode, is worth 6*l.* per fathom; the lode in the 100, west on ditto, is small and unproductive. The lode in the eighty-five, east on ditto, is disordered by a slide; at the eighty-five, west on ditto, we are driving south in search of more lode. The lode in the winze sinking below the seventy, west on ditto, is worth 8*l.* per fathom. The ground in the eighty-five cross-cut north is favourable for driving. The lode in the forty-two, east on Buckingham's, is worth 2*l.* per fathom. The lode in the thirty, east on Morcom's, is one foot wide, promising for ore. The lode in Wilkinson's engine-shaft, sinking below the fifteen, is two and a half feet wide, composed of peach, spar, mundic, and stones of ore. S. Lean. R. Johns.

FOREIGN MINES.

ALTEN MINING ASSOCIATION.

Estimate of Ore for the month of January, 1845.

Mines.	No. of Men.	No. of Fathoms.	Aver. prod. per fm.	Estim. total quantity of ore.	Per cent.	Copper.
Raipas	24	24·1	3·6	86·0	5·5	4·730
United Mines	28	30·2	1·0	30·0	4·0	1·200
Ryper's	10	7·9	1·3	10·0	6·0	0·600
Maneur's	4	2·1	4·8	10·0	5·0	0·500
Wilson's	4	1·1	1·0	1·0	7·0	0·070
Quœnvig	6	4·6	1·1	5·0	6·0	0·300
	76	70·0		142·0		7·400

Mining Report, from the 11th January to the 8th February, 1845.

The ore estimates for January, in the above table, show a very considerable falling off in the produce for the month, not so much in the quantity of ore broken, as in the per centage of copper; and this entirely at Raipas, where we are also beginning to feel the want of a reserve to fall back upon, in case of need. I have before alluded to the *reserves* at this mine, as constituted alone of the gossan lodes, recently discovered; and, in the present instance, having raised an extra quantity of *smalls* from these lodes, the quality of the whole produce has been thereby proportionately reduced, and the per centage of metal deteriorated from seven and eight per cent., as formerly, to about three and a half. In future, we propose to separate the gossan smalls from those produced in other parts of the mine, and hope to account for the disparity between this and former months, more satisfactorily than we at present are enabled to do. The quality of the whole mass must depend entirely on the quantity of prills contained in the lode; these have latterly materially diminished, and *dredge* being now the principal returns, the per centage of the *smalls* must, consequently, be proportionately low. Notwithstanding this discrepancy, my former opinions remain unaltered. We are now severely feeling the evil of prosecuting the mines in the method which circumstances, during the last three years, rendered a matter of necessity, and it will require a period of many months to extend our levels and exploratory workings, before we can possibly recover our former position at the mines. The returns must, also, at this season, be less than during the summer, when the ore contained in the picking stuff and halvans can be returned, as explained in my November report of last year, and at Raipas these are never included in the estimates; they cannot, however, materially effect the per centage of the ore on the total produce.

Raipas.—Since my last report, there has been no alteration in the principal workings on the old lode; but on the gossan lode, in the shallow adit level, the ground has become more favourable for excavating, and the veins of purple and black ore have somewhat increased. A partial sample of gossan, but not the best, which I broke out of the lode a few days ago, yielded 11¼ per cent. of copper. The lode, however, is not so good throughout, and I merely adduce this example to show the favourable indications at the present trifling depth of ten fathoms from the surface, and the expectations held out for exploring it at a deeper level, where we may expect to find it more compact and the ore more concentrated. The black mineral found in this lode, and alluded to in my former report, has, by recent trials, proved to be earthy cobalt, but whether it will prove of commercial importance to us hereafter or not, is impossible for me at present to state; but I fear, from the great quantity of manganese it contains, and the difficulty of separating this metal from the cobalt, will deprive it of the value it would otherwise have. In every case it will be necessary to separate it from the copper ore, the per centage of which (should it be found in greater quantity) it will materially diminish. The result of my analysis has found it to contain:—

Silex	18·15
Alumina	4·90
Protoxide of copper	2·25 = 1·8 metal
Peroxide of manganese	40·50
Ditto of iron	5·60
Oxide of cobalt	18·60
Water	10·13—100·13

United Mines.—The only stopes at these mines are at present on Ward's lode, where within the last few days there has been a trifling improvement. An attempt was made last month to commence stoping in the eighty-five fathom level, but in consequence of the dangerous ground, and other untoward circumstances, it was considered better to drive a cross-cut fairly into the orey part of the lode; after which the ground could be stoped with greater advantage, and without endangering either the mine or the lives of the workmen; the ground in this cross cut is, however, at present very unfavourable, and the men make but little progress. The eighty-five fathom level is improved, and contains good patches of ore. In consequence of the great quantity of water in the westernmost workings, and which on the junction of the eighty-seven fathom level with Robertson's sink would be drained into the deeper workings, it was determined to suspend this level for a time, and cut through the lode instead. After driving about two and half fathoms, this object was effected; the lode was found excessively mundicky, and containing but a small quantity of copper ore. This cross-cut will now be abandoned, and the men will be employed to rise towards the new shaft to the 100 fathom level, for the purpose of expediting this work as soon as possible. The 100 fathom level lode is, without exception, the best and most promising working in this part, but the heavy water-charges, so frequently alluded to, is an unavoidable impediment to our deriving any immediate advantage from hence. The new cross-cut under "Explanatory Workings" has intersected two lodes: one small, and containing good ore, but not answering as yet the expectations it first held out; the other large and poor. I have now set the men to drive westerly on the course of the orey lode, and hope in my next to be able to report favourably thereon.

Ryper's.—Only two stopes are at present worked; both produce good ore, but are not rich. The sink under the adit is poor; but we are daily in expectation of meeting the junction of the lode with a counter or oblique vein, when an improvement in the prospects may be looked for.

Wilson's shaft has been suspended for a month or two, in consequence of the severity of the weather, the heavy charges for clearing water and ice, and the difficulty of working at this season of the year.

Maneur's lode became poor during the latter part of last month, but has again improved; the lode appears divided, and two men are now employed to prove if this is the case. The produce still gradually increases, and we hope shortly to be able to set a stope on the orey ground.

Quœnvig. — The north-west and purple lodes have lately undergone no change; but the appearance of the lode in the old working has improved, and a little ore is again making its appearance.

Exploratory.—It will be observed, that the wishes expressed in your letter of the 26th November last have, in some measure, with respect to Raipas, been anticipated, and, as soon as the return of summer enables us to undertake any surface operations, they will be carried more fully into effect. In the meantime, however, I cannot but entertain the hope that you will enter into the views already expressed, of fully exploring the lode under the eighty, and particularly in the 100 fathom levels, where the prospects are entirely changed; the necessity of this is rendered more obvious, by the sacrifice of capital in reaching the present depths, and which, without other exploratory workings on the lode, may be considered an useless expense, both of time and money. The new shaft towards this place is already sunk two fathoms, and the ground, although hard, is very favourable for excavating. No change has taken place at the Church.—In January abstract will be found some men who have earned above the average wages; but, on reference to December, it will be seen, that they have continued the bargain two months, a charge of a portion of their labours having then been passed. The average of the *whole* will, however, be found below the mean.

Wheal Mary Mine.—At a meeting of the shareholders in this company, held at Callington, last week (J. J. Hays, Esq., of London, in the chair), the reports of three mining agents, besides that of the captain, were received, and which were considered highly satisfactory; a call of 1*l.* per share was made, payable into the bank of Gill, Rundle, and Co., Tavistock. Resolutions were passed for the future management of the mine, and the best thanks of the meeting were unanimously voted to the chairman and the other London gentlemen who went down purposely to attend the meeting, and who, with the country shareholders, were highly delighted with the appearances of the mine. Since his meeting a valuable discovery has been made.—(*From a Correspondent.*)

Current Prices of Stocks, Shares, & Metals.

ENGLISH AND FOREIGN STOCKS.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Consols, Money, 99⅞
ditto, Account, 99⅞
Exchequer Bills, 59 61 pm.
Belgian, 5 per Cents., 100½ 1
Danish, 3 per Cents., 89 90
Dutch, 2½ per Cents., 63½
ditto, 4 per Cents., 97½
Portuguese, Conv., 5 per Cents., 65½ 6½
Russian, 5 per Cents., 116½ 117
Spanish, 5 per Cents., 29⅞
ditto, 3 per Cents., 40⅛
Brazil, 5 per Cents., 88 9
Chili, 6 per Cents., 99 101
Colombia, 6 per Cents., 15⅝ 16
Mexican, 5 per Cents., 35¼
Peru, 6 per Cents., 32 3

[*From our own Correspondents.*]

LATEST PRICES OF IRISH STOCKS.—3 per Cent. Consols, 98½*l.* to 99⅛*l.*; 3 per Cent. Reduced, —*l.*; 3½ per Cent. Stock, —*l.* to —*l.*; 3½ per Cent. Debentures, 94½*l.* to 94½*l.*; Bank Stock, 211½*l.*—Dublin and Kingstown Railway, 250*l.*; Drogheda, 93*l.*; Gt. Southern and Western, 16*l.*; Dublin and Belfast Junction, 9½*l.*; Dublin and Athlone, 2*l.*; Dublin and Galway, 4½*l.*; Belfast and Ballymena, 4½*l.*; Limerick and Waterford, 6½*l.*; Dundalk and Enniskillen, 4*l.*; Wexford and Carlow, 3*l.*—Hibernian Bank, 35*l.*; National Bank of Ireland, 16½*l.*; Royal Bank, 14½*l.*; National Insurance, 40*l.*; Patriotic, 11½*l.*; Mining Company of Ireland, 13½*l.*; Wicklow Copper Mine, 17½*l.*; City of Dublin Steam Company, 107*l.*; British and Irish Steam Company, 55½*l.*; Dublin and Glasgow ditto, 44*l.*; Steam-ship Building ditto, 53½*l.*

CURRENT PRICES AT LIVERPOOL—THURSDAY EVENING.

Stock.	*Closing pr.*	*Sa'es.*	*Stock.*	*Closing pr.*	*Sa'es.*
Aberdeen Railway	£4¼ 4⅝	4	London&South-Western	80 81	—
Barnsley Junction	10⅝ 10¾	10⅝	London and York	3½ 3¾	3½
Belfast and Ballymena	4½ 4⅝	4½	Lynn and Ely	6¾ 7⅛	—
Blackburn & Accrington	8 8½	8	Lynn and Dereham	1½ 1⅝	1⅝
Blackburn and Bolton	4½ 4⅝	4⅝	Leeds and West Riding	7⅛ 7⅜	7⅛
Blackburn and Preston	15½ 15¾	—	Limerick and Waterford	7⅛ 7⅜	7⅛
Birkenhead, Manch., &c.	11¼ 12	12 11½	Manchester and Goole	dis 1pm	—
Birming. & Gloucester	138 139	139½ 40	Manchester & Birming.	61 62	61⅜
Bolton, Wig., & Liverp.	13⅜ 13¾	13⅜	Manch., Bolton, & Bury	164½ 165½	165⅜
Bristol and Exeter	82 83	—	Manch. & Rossendale	16⅜ 17⅛	—
Bristol and Gloucester	61 62	—	Manchester & Buxton	3⅛ 3⅜	3⅛
Caledonian	11⅛ 12	11⅛	Manchester and Leeds	148½ 149½	—
Cambridge and Lincoln	9 9⅛	9⅛	Midland Stock	154½ 155⅛	156 4
Chester & Birkenhead	48½ 49	48½	Mullingar and Athlone	1⅜ 1⅝	—
Chester and Holyhead	9⅛ 9⅞	8⅞ 9⅛	Newcastle and Berwick	16½ 16⅝	16½
Churnet Valley	7⅛ 7⅛	7⅛	Newcastle and Carlisle	123 125	—
Cork and Bandon	4 4⅛	—	Newcastle & Darlington	42½ 50	49½
Cork & Limerick, Direct	⅛ 1	—	North British	18 18½	—
Direct Northern	5⅜ 6	5⅜	North Kent	3⅜ 3⅝	—
Dublin and Belfast	8⅜ 9½	9	North Union, Stock A	148 149	—
Dublin and Cashel	16½ 17	16½	Ditto ditto B	91 92	—
Dublin and Galway	4½ 5	—	North Wales Mineral	16½ 16⅝	16½ 16
Dublin and Drogheda	90½ 99½	—	Norwich and Brandon	17 18	—
Dundalk & Enniskillen	4½ 4⅝	4½	Oxford, Worc., & Rugby	4 4⅛	4½
Dundee and Perth	3⅛ 3½	—	Preston and Wyre	34⅜ 35½	—
Eastern Counties	21⅛ 21⅝	21⅛	Scottish Central	6 6⅛	6½
Edinburgh and Glasgow	61½ 62½	62½	St. Helens & Runcorn G.	24½ 25½	—
Edinburgh & Granton	14⅝ 15⅜	15⅝	Sheffield and Lincoln	1 1⅛	1⅛
Edinburgh & Northern	1⅛ 1⅜	—	Sheffield & Manchester	122 124	122½ 23
Ely and Bedford	1⅝ 2	—	Shrewsbury & Gr. Junc.	5⅜ 6⅛	5⅜
Glasgow, Dumfries, &c.	1 1⅛	—	Shrewsb. Wolverh., &c.	4⅜ 5	—
Glasgow and Greenock	18 18½	18	South-Eastern	42⅜ 43	42⅜
Glasgow, Paisley, & Ayr	62 63	—	South Wales	6⅛ 6⅜	—
Grand Junction	225 227	—	Trent Valley	17⅛ 18	17⅛
Gt. Grimsby & Sheffield	5⅜ 6	5⅜	Ulster	45 46	—
Gt. North of England	192 194	—	West Yorkshire	3⅜ 3⅝	3½
Great Western	181½ 183½	—	Wexford and Carlow	3 3½	—
Harwich	2½ 2¾	2½	Yarmouth and Norwich	27½ 28½	—
Huddersfield and Manch.	3½ 3⅝	3⅜	York & North Midland	104 106	—
Huddersfield & Sheffield	7½ 7⅝	7½	York and Selby	67 68	—
Hull and Selby	97½ 98½	—	Jamaica	30 30½	—
Kendal & Windermere	4½ 4⅝	—			
Kilkenny Junction	⅜ ½	—	Boulogne and Amiens	11⅜ 12½	12½
Lancaster and Carlisle	39 40	40	Con. Central of France	18½ 19	—
Lancaster and Preston	54 55	—	Lyons and Avignon	3½ 3⅝	3½
Leeds and Bradford	43 45	—	Northern of France	6 6⅛	—
Leeds and Dewsbury	3⅛ 3⅜	—	Orleans, T., & Bordeaux	12⅜ 13	13⅛
Leeds and Thirsk	4½ 4⅝	4½	Paris and Lyons	3 3⅛	3½
Liverpool & Manchester	202 204	—	Paris and Orleans	50 50½	—
Liverpool and Preston	2½ 2⅝	3½	Paris and Rouen	44 44½	—
London & Birmingham	235 237	237 6	Paris and Strasburg	2½ 2⅝	—
London and Blackwall	7⅜ 7⅝	—	Rouen and Havre	31 31½	—
London and Brighton	65 66	65½	Sambre and Meuse	6⅜ 6½	—
London and Croydon	18 18½	—	Strasburg and Basle	13⅜ 13½	—
London and Portsmouth	2 2½	—	Tours and Nantes	3½ 3⅝	3½

13, Castle-street and Stock Exchange, Liverpool. JOHN GREAVES.

EDINBURGH, THURSDAY.—Aberdeen, 3½*l.*; Arbroath and Forfar, 20*l.*; Ballochney, —*l.*; Caledonian, 10½*l.*; Dundee and Arbroath, 36*l.*; Dundee and Perth, 3½*l.*; Dalkeith and Leith Branch, 10*l.*; Edinburgh and Glasgow, 62*l.*; Edinburgh, Leith, and Granton, 15½*l.*; Edinburgh and Northern, 1½*l.*; Glasgow and Ayrshire, 62*l.*; Glasgow and Garnkirk, 37½*l.*; Glasgow and Greenock, 17½*l.*; Glasgow, Dumfries, and Carlisle, 1½*l.*; Monkland and Kirkintilloch, 30½*l.*; North British, 17½*l.*; Scottish Central, 5½*l.*; Slamannan, 25*l.*; Wishaw and Coltness, 40*l.*

COAL MARKET, LONDON.

MONDAY.—Price of coals per ton at the close of the market:—Adair's Main 15 6—Buddle's West Hartley 16—Carr's Hartley 16 6—Holywell Main 17—New Tanfield 14 6—Ord's Redheugh 14 3—Old Tanfield 14 6—Townley 15—Taylor's West Hartley 16—West Hartley 15 6 and 16 6—West Wylam 15 9—Wall's End Killingworth 16 6—New Walker 15 6—Newmarch 15 6—Ramsay 13 6—Belmont 18 6—Braddyll's Hetton 19—Haswell 20—Houghall 17 6—Hetton 18 9 and 19—Lambton 18 6—Morrison 17—North Hetton Lyons 17 6—Richmund 17 6—Russell's Hetton 18 6—Stewart's 19—Caradoc 19—Hartlepool 19—Kelloe 17 6—Leasingthorne 19—Adelaide 18 9—Cowndon Tees 17 6—Dennison 16 3—Maclean's Tees 16—Tees 18 9—West Tees 16 9—Cwm Amman 21—Merthyr 21 6—Sidney's Hartley 16—Snapethorpe 16—West Hartley Netherton 16 6.—Ships arrived, 143.

WEDNESDAY.—Adair's Main 15 6—Buddle's West Hartley 16—Carr's Hartley 16—Chester Main 15 6—Davison's West Hartley 16 6—East Tanfield 14 6—Hastings' Hartley 15 6 and 16—Holywell Main 16 6—Nelson's West Hartley 16 6—New Tanfield 14 6—Ord's Redheugh 14—Old Tanfield 14 6—Ravensworth's West Hartley 16—Tanfield Moor 18 6—Townley 15—Taylor's West Hartley 15 9—West Hartley 15, 15 6 & 16—West Tyne Main 14—West Wylam 15 6—Wylam 16—Wall's End Heaton 17—New Walker 15 6—Newmarch 15 6—Urpeth 16—Wharncliffe 16 9—Belmont 17 6—Braddyll's Hetton 19—East Hetton 16—Haswell 19 6—Houghall 17—Hetton 19—Hylton 16 6—Lamlton 18 3, 18 6, and 19—North Hetton Lyons 17—Richmund 17—Russell's Hetton 18 6—Stewart's 19—Caradoc 19—Kelloe 17 6—Leasingthorne 18—South Kelloe 17—Trimdon 18—Adelaide 18 9—Brown's Deanery 16 9—Eden Hartlepool 15—Fox 16 6—Gordon 15 and 15 3—South Durham 16 6—Seymour Tees 17—Tees 18 3—Tennant 16—Anthracite 20—Cowpen Hartley 16—Hartley 15 6—Lewis's Merthyr 21 6—Sidney's Hartley 16—West Hartley Netherton 16 6.—Ships arrived, 68.

FRIDAY.—Buddle's West Hartley 15 6—Davison's West Hartley 16—Hastings' Hartley 15 6—Holywell Main 16 6—Nelson's West Hartley 16—Ord's Redheugh 14—Townley 15—Taylor's West Hartley 15 6—West Hartley 15 to 16—West Tyne Main 13—West Wylam 15 9—Wylam 15 6—Wall's-end: Gosforth 16 6—Hedley 15 6—Killingworth 15 3 to 15 6—East Hetton 16—Hetton 19—Lambton 18 6—Morrison 16—Richmund 16 9—Shotton 18 6—Adelaide 17 9—Seymour Tees 17—Anthracite 18 6—Cowpen Hartley 16—Hartley 15 6—Derwentwater Hartley 17—Sidney's Hartley 16—West Hartley Netherton 16.—Ships arrived, 16.

MONTHLY IMPORTATION OF COAL, CULM, AND CINDERS.

Quality.	*Ships.*	*Tons.*	*Quality.*	*Ships.*	*Tons.*
Newcastle	333	106,945	Welsh	25	5,669
Sunderland	236	69,253	Yorkshire	64	6,324
Stockton	245	66,674	Small coal	4	893
Blyth	33	6,897	Culm	1	320
Scotch	15	1,509	Cinders	11	2,715
Totals				967	267,330

Imported in March, 1844:—Coal, culm, and cinders.....270,771 tons.
Inland coals brought by canal in the month of February, 1845, upon which the city dues were received ..... 6,663 tons 10wt.
Inland coals brought by railways, upon which city dues were received into the Chamber, in the month of Fenruary, 1845..... Nil.

Comparative Statement of 1844 *and* 1845.

Imported from 1st Jan. to 31st March, 1845	Ships	3442	1,011,733 tons.
Imported from 1st Jan. to 31st March, 1844	"	2517	697,120 "
Increase in the present year	"	925	314,613

ABRIDGED LIST OF NEW PATENTS FOR FEBRUARY.

J. B. Vallauri, Oxenden-street, Middlesex, for improvements in lamps and wicks.

H. F. Talbot, Locock Abbey, Wilts, for improvements in obtaining motive power, and in the application of motive power to railways.

G. Ellins, Droitwich, for certain improvements in manufacturing salt, and for apparatus for manufacturing salt.

A. Gordon, Westminster, for an improvement or improvements in producing motive power, by the action or agency of heat, and in the application of that power to purposes of locomotion or navigation.

G. Selby, Birmingham, for certain improvements in the manufacture of pipes, or tubes, of that class or kind which are formed by welding skelps of wrought-iron.

E. A. Brooman, gentleman, of the Patent Office, 166, Fleet-street, for certain improvements in the preparation and application of artificial fuels, mastics, and cements—being a communication.

J. and A. Blyth, engineers and copartners, St. Anne, Middlesex, and G. P. Hubbuck, engineer, Pender's-end, for certain improvements in steam-engines, steam-boilers, and machinery for propelling vessels, which improvements in steam-engines and steam-boilers are for the most part applicable to the purposes of steam navigation, but are also applicable to other purposes for which steam-engines or steam-boilers are or may be used.

T. Dunn, engineer, Manchester, for certain improvements in, or applicable to, turntables, to be used on or in connection with railways.

P. B. Williams, gentleman, Llegodig, North Wales, for certain improvements in the manufacture of artificial stone.

H. Grissel and J. L. Lane, engineers, Regent's Canal Iron-works, for certain improvements in weighing machines, and also in steel-yards.

T. Drew, chemist, St. Austell, Cornwall, and E. Stocker, merchant, of the same place, for certain improvements in the production and manufacture of naphtha or other inflammable matter.

H. S. Rayner, gentleman, Alfreton, for certain improved means of preventing accidents to carriages on railways and common roads.

L. T. M. Rochet, gentleman, Lincoln's Inn-fields, for improvements in the construction of ovens, applicable also for the purposes of economising fuel in furnaces generally—being a communication.

COPPER ORES

Sampled March 19, *and sold at Serpell's Hotel, Pool, April* 3, 1845.

Mines.	*Tons.*	*Price.*	*Mines.*	*Tons.*	*Price.*
East Wh. Crofty	128	£5 4 6	Dolcoath	33	£5 8 6
ditto	126	7 14 0	ditto	32	1 19 0
ditto	117	5 19 6	ditto	30	8 0 0
ditto	90	6 18 0	ditto	29	12 8 0
ditto	68	2 14 0	South Wh. Basset	70	5 8 6
ditto	64	4 12 6	ditto	67	5 5 6
ditto	48	1 12 0	ditto	46	4 1 6
ditto	37	1 16 6	ditto	36	3 16 0
Longclose	75	7 0 6	ditto	24	8 0 6
ditto	53	5 8 6	ditto	16	7 1 6
Dudnance	16	4 1 0	ditto	1	25 7 0
Tincroft	88	3 15 0	Par Consols	89	6 4 0
ditto	80	5 15 6	ditto	86	6 8 0
ditto	60	5 7 6	ditto	70	6 13 0
ditto	50	3 15 0	East Pool	68	5 13 6
ditto	46	2 15 0	ditto	60	5 10 0
ditto	40	4 16 6	ditto	36	3 4 6
ditto	36	6 7 6	ditto	32	6 7 6
ditto	30	2 11 0	ditto	20	3 5 6
Camborne Vean	84	4 6 6	Fowey Consols	69	4 17 0
ditto	71	6 11 0	ditto	68	3 2 0
ditto	66	6 3 6	ditto	67	5 9 6
ditto	56	3 5 0	West Wh. Jewel	83	3 1 6
ditto	31	1 12 0	ditto	72	3 5 0
ditto	30	4 12 6	ditto	43	5 1 0
Stray Park	60	4 7 6	North Roskear	86	7 6 6
ditto	12	1 12 6	ditto	71	7 9 6
Tresavean Barrier	90	6 3 6	Treviskey	75	8 14 0
ditto	81	9 7 0	ditto	63	8 14 0
ditto	70	7 13 0	Wh. Trewavas	64	5 11 0
ditto	60	7 12 0	Godolphin	37	5 9 0
South Caradon	108	5 18 0	ditto	25	15 15 0
ditto	103	6 3 0	ditto	1	42 0 0
ditto	52	5 19 0	Tretoil	45	4 14 0
ditto	37	4 13 0	ditto	9	18 0 0
Dolcoath	91	6 15 6	Condurrow	22	4 18 6
ditto	70	4 3 6			

TOTAL PRODUCE.

East Wh. Crofty	822	£4590 4 0	Par Consols	245	£1567 14 0
Longclose			East Pool	216	1101 10 0
Dudnance			Fowey Consols	204	912 5 6
Tincroft	430	1915 10 0	West Wh. Jewel	198	706 7 6
Camborne Vean	410	1888 5 0	North Roskear	157	1160 13 6
Stray Park			Treviskey	138	1200 12 0
Tresavean Barrier	301	2304 12 0	Wh. Trewavas	64	355 4 0
South Caradon	300	1752 2 0	Godolphin	63	637 8 0
Dolcoath	285	1749 16 0	Tretoil	54	373 10 0
South Wh. Basset	260	1388 11 6	Condurrow	22	108 7 0

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Mines Royal Company	304½	£1714 1 9
English Copper Company	888½	4850 2 0
Vivian and Sons	630½	2523 9 9
Freeman and Co.	572	3227 2 6
P. Grenfell and Sons	414	3116 9 0
Sims, Willyams, Nevill, Druce, and Co.	657½	3603 12 0
Williams, Foster, and Co.	702½	4677 15 0
Totals	tons 4169	£23,712 12 0

Average standard, 102*l.* 1s.—Average produce, 8¼.—Average price per ton, 5*l.* 13s. 6d.—Quantity of ore, 4169 tons.—Quantity of fine copper, 344 tons 12 cwt.—Amount of money, 23,712*l.* 12s. 0d.—Average standard of last sale, 108*l.* 15s.—Average produce ditto, 6¾.

Copper ores for sale on Thursday next, at Andrew's Hotel, Truro.—Mines and Parcels.—Carn Brea Mines 524—Wheal Prosper 420—Wheal Providence 360—Perran St. George 356—United Hills 221—Fowey Consols 203—Wheal Brewer 194—Trenow Consols 149—Grambler and St. Aubyn 132—Providence Mines 124—Wheal Virgin 123—West Wheal Treasury 48—Wheal Alice 34—Carn Perran 24—Wheal Wellington 18—West Copper Bottom 10 -Relistian 9—Wheal Bolton 6—Wheal Speed 5.—Total, 2960 tons.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—Wheal Maria 825—Tresavean 286—Par Consols 257—Fowey Consols 205—Holmbush 193—Bedford United Mines 109—Wheal Gorland 58.—Total, 1933 tons.

THE QUARTERLY SALE OF COPPER ORES IN CORNWALL.—Copper ores, 40,367 (21 cwts).—Fine copper, 3152 tons 16 cwts.—Amount of money, 215,284*l.* 3s.—Average standard, 103*l.* 9s.—Average produce, 7⅞ and 1-16th.—Average price per ton, 5*l.* 6s. 6d.

COPPER ORES

At SWANSEA, for sale April 9.—Chili 57—42—34—96—53. Knockmahon 98—80—63. Bearhaven 128—106. Cuba 58—31—23—56. Ballymurtagh 43—40—30. Cronebane 91. Vigra and Cloga 26—20—22—19. Aberdovey 24. Molland 8—7. Cwm Sebon 12. Llanidloes 6. Bwlch 2.—Total, 1280 tons.

LATEST CURRENT PRICES OF METALS.

LONDON, APRIL 2, 1845.

	£ s.	£ s. d.		£ s.	£ s. d.
IRON—Bars...Wales...*ton*	9 15—10 0	0	TIN—Com. blocks *g...cwt.*	0 0— 4 0	0
" ...London ...	0 0—10 10	0	" bars ...	4 1— 4 1	6
Nail rods " ...	0 0—11 5	0	Refined ...	0 0— 4 5	0
Hoop(Staf.) " ...	13 10—14 0	0	Straits *h* ...	3 11— 3 12	0
Sheet " " ...	14 10—15 0	0	Banca ...	3 13— 3 14	0
Bars " " ...	0 0—13 0	0	TIN PLATES—Ch.,IC *i, box*	1 17— 1 18	0
Scotch pig *b*, Clyde	5 10— 5 15	0	" IX ...	2 3— 2 4	0
Russian *c*, CCND...	0 0— —		Coke, IC ...	1 12— 1 14	0
" PSI ...	0 0—16 0	0	" IX ...	1 18— 2 0	0
" Gourieff	0 0— —		LEAD—Sheet *k* ...*ton*	18 5—18 10	0
" Archangel	0 0— —		Pig, refined ...	0 0—19 0	0
Swedish *d*, for arriv.	12 10—13 0	0	" common ...	17 0—17 10	0
" on the spot	0 0— —		" Spanish, in bd.	16 10— —	
" Steel, fagt.	0 0—18 10	0	" American ...	0 0— —	
" " *kegs e*	0 0—17 15	0	SPELTER—(Cake) *l* ...	0 0—22 5	0
COPPER—Tile *f* ...	0 0—83 0	0	ZINC—(Sheet) *m* ...	0 0—30 0	0
Tough cake ...	0 0—84 0	0	QUICKSILVER *n* ...*lb.*	0 0— 0 4	6
Best selected ...	0 0—87 0	0	REFINED METAL ...*ton*	0 0— 7 2	6
Ordinary sheets, *lb.*	0 0— 0 0	3½			
" bottoms	0 0— 0	10½			

a Discount 2½ per cent. *b* Net cash. *c* In bond, discount 2½ per cent. *d* Ditto *e* In kegs ½ and ¼-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash in bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash, in bond *m* Discount 1½ per cent. *n* In bond, discount 1½ per cent.

REMARKS.

IRON.—*Welsh and Staffordshire.*—In course of the past month an advance of 1*l.* per ton has taken place on the former, and of 2*l.* per ton on the latter, and although the existing prices are considerably higher than we have been accustomed to for some years, yet so general is the opinion of their being maintained, and also that further advances may probably soon occur, that orders both from abroad and for home use are beginning to come in pretty freely; rails are about 12*l.* 10s. to 12*l.* 15s. per ton. *Scotch Pig.*—At a recent meeting of the makers 5*l.* 10s. was fixed as a minimum, but none of them will sell under 6*l.*, with a discount of 2½ to 4 per cent., and even at this price they will not undertake large orders. A few holders came into the market recently as sellers, but we have reason to believe those parties bought some time previously, and were desirous of realising a good profit; the price has since rallied, and our quotations are firmly maintained. *Swedish.*—None in first hands; orders have been recently given at 12*l.* 5s. for arrival. The stock of steel is low, and price firm.

COPPER.—No change to notice; demand fair.

TIN.—*English.*—An advance in the past month of 5s. per cwt. Stocks in hand are low. *Foreign.*—Our quotations are merely nominal, there being only a very small quantity in importers hands. The Dutch sale, we learn, is delayed till the 21st current.

TIN PLATES.—An advance of 3s. to 4s. per box occurred in March, owing to the increased value of tin and iron. Makers are firm at our quotations.

LEAD.—A good demand both for home and foreign use. The principal northern smelters have sold recently at an advance of 10s. per Newcastle fodder. A few parcels of Spanish arrived in this port in the past month; but none came into the market except 1500 pigs, containing silver, which are, we believe, still on hand; besides this parcel, there is no foreign lead here or at Liverpool, nor can we find there is any expected.

SPELTER.—A few parcels in second hands were sold about two weeks ago at 21*l.* 10s., but the price has been held by importers at 22*l.* to 22*l.* 5s.; the demand continues inactive.

The transactions since our last have not been very extensive. In the early part of the week a sale of 4000 tons of pig-iron was reported at 5*l.* 10s. per ton cash; since which the trade has been rather unsettled—sales varying from 5*l.* 2s. 6d. to 5*l.* 5s. cash have been made. For bars, the makers' price is 10*l.*, but sales have been made at 9*l.* 10s. cash.—Boiler plates are quoted at 13*l.* 10s.—*Glasgow Citizen.*

JOINT-STOCK BANKS.

Shares.	*Company.*	*Paid.*	*Price.*	*Shares.*	*Company.*	*Paid.*	*Price.*
22,500	Australasia	£40	46 8	60,000	London Joint-Stock	10	14 ⅛
20,000	British N. American	50	45 ⅛	40,000	Provincial of Ireland	25	46
5,000	Ceylon	20	14 15	20,000	Ditto, New	10	17½
1,000	Commer. of London	200	21⅛	20,000	National of Ireland	17½	16⅝
20,000	Colonial	25	14 15	10,000	Natl. Provl. England	35	26½
10,000	Canada Bank	32½	43	10,000	Ditto, New	10	9⅛
4,000	Ionian	25	25	32,000	Union of Australia	25	27 ⅛
20,000	London and County	20	21⅛	8,000	Ditto ditto	2½	2⅛
40,000	London & Westminster	20	27⅛ ⅛	60,000	Union of London	10	12½

MISCELLANEOUS.

Shares.	*Company.*	*Paid.*	*Price.*	*Shares.*	*Company.*	*Paid.*	*Price.*
10,000	Anglo-Mexican Mint	£10	16⅛	5,000	London Cemetery	20	18
10,000	Anti Dry-Rot	18½	2	8,000	London Rever. Int. Soc.	20	17
10,000	Asphalte (Claridge)	4	1	10,000	London Wood Paving	2	2⅛
10,000	Assam Tea Company	20	4⅛	15,000	Met. Pat. Wood Paving	5	6⅛
10,000	Austral. Agricultural	30	25	20,000	Mexican & S. American	7	4⅛
5,709	Australian Trust Co.	35	33	20,000	New Brunswick Land	75	20
2,200	Bitumen Bastenne	5½	5⅛	6,092	Peninsular & Oriental	50	79½
10,000	Ditto Poloncean	2	⅛	10,000	Patent Elastic Pavt.	1	1⅛
6,000	Brit. Amer. Land Co.	35½	12	5,387	Rever. Interest Society	100	100½
4,000	Brit. Loan & Dis. Inst.	2½	2⅛	15,000	Royal Mail Steam Pkt.	60	42⅛
8,600	Brit. Rock & Pat. Salt	35	12	13,572	St. Katharine Dock	120	117⅝
5,000	Droitwich Patent Salt	25	14	2,000	Shott's Iron Foundry	48	36
2,700	Equitable Rever. Soc.	80	85	14,000	South Australian	20	10
20,000	General Steam Navig.	14	28	7,000*	Southampton Dock Co.	50	30
5,000	Gen. Rever. Int. Soc.	10c	10½	3,000	Ship Owners' Towing	7½	15
2,100	Hungerford Market	100	55⅛	14,000	Thames Tunnel	50	5⅛
1,000	London Corn Exch.	37½	25	10,000	Van Dieman's Land	20	4

* 7000 shares of 50*l.*, since converted into 350,000*l.* stock.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	*Company.*	*Paid.*	*Price.*
235	Andrew and Boscawen	23	32½
96	Bell	—	10
4000	Bedford	2½	8
100	Botallack	175	500
10000	New British Iron, regis.	10	25 6
—	Ditto ditto, scrip	10	27½ 6½
8000	Blaenavon	50	30
120	Brewer	—	65
5000	Con. Tretoil Mining Ass.	2½	¼
128	Cosheen	20	200
114	Charlestown	—	300
3200	Cornubian Lead Co.	3	4½
128	Comfort	—	35
2560	Cook's Kitchen	—	14
1000	Carn Brea	15	90
1000	Callington	18	24
256	Caradon Wh. Hooper	3	10
128	Caradon Consols	45	140
256	Caradon Copper Mine	1½	5
128	Caradon Mines	1	60
256	Caradon United	3	15
128	Creeg Brawa	120	100
1900	Combmartin	5½	10
240	Craddock Moor	3	65
186	Dolcoath	—	100
1000	Dhurode	2	5
10000	Durham County Coal	45	7⅛
128	East Pool	5	45
94	East Wheal Crofty	—	475
128	East Wheal Rose	50	1500
—	East Wheal Albert	1	5
256	East Wheal Alfred	2	10
9000	East Tamar Consols	1	1⅛
512	Fowey Consols	—	120
2448	Grambler & St. Aubyn	—	80
100	Great Consols	1000	500
1000	Godolphin	—	35
256	Gonamena	6	112
256	Green Valley	12	18
10000	Hibernian	12½	1
1000	Holmbush	14	34
128	Hallenbeagle	—	50
1000	Hanson	5	5
800	Hawkmoor	2	5
160	Levant	—	150
128	Lanarth & Penstruthal	—	150
1000	Lewis	5	6
128	Ludcott	2	8
20000	Mining Co. of Ireland	7	14½
2800	Marke Valley	10	4⅛
70	North Roskear	—	600
200	North Holmbush	—	15
100	North United	29	20
256	North Wheal Rose	22½	80
256	North Treburget	1	5
15000	Northern Coal Co.	23	2
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	770
256	Penhallow Moor	15	20
10000	Rhymney Iron	50	40 2
256	Rose Consols	10	7
800	South Towan	10	1⅛
280	Spearn Moor	20	—
1000	Stray Park	43	21
128	South Wheal Basset	—	290
128	South Caradon	5	600
256	St. Austell Consols	4	10
256	South Wheal Rose	2	5
128	South Yeoland	10½	25
256	South St. George	—	11½
120	Trethellan	5	105
128	Trewavas	—	60
96	Tresavean	10	330
128	Tregardock	5	8
128	Tokenbury	97	100
256	Trenow Consols	—	135

BRITISH MINES—*continued.*

Shares.	*Company.*	*Paid.*	*Price.*
120	Treviskey and Barrier	61	220
5000	Treleigh Consols	5½	3⅛
9600	Tamar Consols	3	10
6000	Tincroft	7	15
128	Trewellard	12	25½
4000	United Hills	5	4
100	United Mines	1000	900
6000	Wicklow Copper	5	17
512	West Fowey Consols	40	35
384	Wheal Franco	20	70
128	Wheal St. Andrew	65	45
127	Wheal Virgin	—	80
256	West Caradon	40	400
3845	West Wheal Jewel	10½	6½
120	West Trethellan	5	55
128	Wheal Rose	40	45
256	West Wheal Tolgus	6	6½
1000	Wheal Harriet	—	1½
128	Wheal Penrose	—	10
128	Wheal Providence	16	150
68	Wheal Clifford	—	500
256	Wheal Albert	10	12
128	West Basset	10	37½
128	Wheal Acland	13	12
128	Wheal Sisters	43½	40
99	Wheal Seaton	150	500
128	Wheal Henry	—	35
110	Wheal Hope (

The Mining Journal.

No. 502.] ENLARGED SHEET. [April 5.

BRISTOL AND EXETER RAILWAY.—NOTICE.

—All SHARES standing REGISTERED ON the 6th day of April, or the transfers of which (in proper form) reach this office before or *on* that day, are entitled to the HALF-YEAR'S DIVIDEND.—Warrants will be forwarded *by post*, before the end of April, payable in the month of May. By order of the directors,

Office, 30, Broad-street, Bristol, March 29, 1845. J. B. BADHAM, Sec.

COVENTRY AND LEICESTER JUNCTION RAILWAY.

—The PARLIAMENTARY DEED and SUBSCRIBERS' CONTRACT will LIE for SIGNATURE, by subscribers residing in or near London, from Twelve to Three inclusive, at the OFFICES of the COMPANY, 3, Church-court, Old Jewry.

London, April 4, 1845. R. HARTLEY KENNEDY, Chairman.

COVENTRY AND LEICESTER JUNCTION RAILWAY

BRANCH LINE FROM NUNEATON,

TO FORM A JUNCTION WITH THE BIRMINGHAM AND DERBY JUNCTION RAILWAY, NEAR TO COLESHILL.—*Length Ten Miles.*

Increased capital £225,000, in shares of £25 each.—Deposit £1 5s. per share.

The provisional committee of the Coventry and Leicester Junction Railway, with the view of accommodating the important through as well as local traffic between Leicester and Birmingham, have decided upon this extension, which will effect a saving of upwards of twelve miles in a distance of forty-nine miles between those important districts. The country to be traversed presents no considerable engineering difficulties, and the traffic returns show an ample source of revenue.

The shares will be appropriated to holders of Coventry and Leicester scrip in the proportion of two shares to every three held in that company. Allotment letters will be delivered to parties producing the scrip of the Coventry and Leicester Railway Company any day after Wednesday, the 9th, till Wednesday, the 30th April inst. inclusive, between the hours of Ten and Four, at their office, 3, Church-court, Old Jewry, London. All parties not so applying will be considered to have waived their option.

London, April 4. R. HARTLEY KENNEDY, Chairman.

LONDON AND WINDSOR RAILWAY.

LENGTH TWENTY MILES.

Connecting Kensington, Hammersmith, Chiswick, Turnham Green, Kew, Brentford, Isleworth, Hounslow, Hanworth, Bedfont, Stanwell, Colnbrook, Datchet, Eton, and Windsor.

Capital £500,000, in shares of £25 each.—Deposit £1 per share.

Provisionally Registered, pursuant to 7 and 8 Vic., cap. 110.

PROVISIONAL COMMITTEE.

Sir Felix Booth, Bart., Windsor.
John Baber, Esq., Knightsbridge.
Captain Edward Blanckley, R.N., Duke-street, Grosvenor-square.
J. Brown, Esq., Fenchurch-street.
T. Davidson, Esq., St. George's-place, Hyde-park Corner.
Sir John Hare, Langham-place.
William Kuper, Esq., Camberwell.
C. W. Nicolay, Esq., Oxford-square, Hyde-park.
W. F. Pocock, Esq., Knightsbridge.
S. H. Powell, Esq., Brixton.
Henry Scale, Esq.
Captain M. H. Sweny, R.N., Brompton.
J. Thorne, Esq., Westminster.
Captain F. Bayly Wardroper, H.C.S., Knightsbridge.
W. White, Esq., Fitzroy-square.

(With power to add to their number.

ENGINEERS—Sir John M'Neill and W. H. Smith, Esq.

BANKERS—London: Sir J. W. Lubbock, Bart., & Co.; Messrs. Cocks, Biddulph, & Co.; Windsor: Messrs. Neville, Reed, & Co.; Reading and Maidenhead: Messrs. Stephens, Blandy, & Co.

SOLICITOR—George Smith, Esq., 24, Golden-square.

This line of railway has met with general approbation, and its importance cannot be questioned, traversing as it will an intermediate locality totally excluded from the benefit of railway communication, through, it may be said, one continuous town, for a distance of ten miles, and a densely populated neighbourhood, the property around which is open, flat, and of a highly favourable character for the construction of a line of railway.

On the average, from 2,000 to 3,000 passengers a-day pass and repass, by omnibuses and other vehicles, through the intermediate points between the termini of this line of railway; this alone would give, at an average of 9d. each, a clear return of upwards of 6 per cent. on the invested capital.

It is quite obvious that the point of terminus at each end of the line may be varied or extended at pleasure, according with the wishes of Her Majesty's Commissioners of Woods and Forests.

It is intended that the line shall commence at Windsor, pass near to Datchet, Eton, Colnbrook, Hounslow, north of Sir Felix Booth's distillery at Brentford and the London-road, and terminate at or near Pimlico.

In addition to the advantages of a direct communication between the two royal residences of London and Windsor, avoiding the delay and inconvenience of three distinct changes of conveyance, and reducing the time requisite for the entire journey to thirty minutes, the proposed line will bring the neighbourhood of Bagshot, Ascot, Sunning Hill, and Egham, all abounding with elegant villas and a wealthy population, within an easy and accessible distance of the capital, and form the main trunk for a direct communication to Exeter and the whole of that vast intermediate district through the south-west of England.

Independently of this, a great saving will be effected in the cost of locks, horses, and the other great expenses of a river conveyance of upwards of fifty miles, always against a strong stream, affording an economical and certain mode of transit for heavy goods, avoiding the frequent delay and inconvenience incidental to river transit.

All usual and proper clauses for limiting the liability of shareholders to the amount of their respective shares will be provided for by the bill, and 4 per cent. interest will be allowed on deposits and calls until the completion of the line; and no future call will exceed £2 per share, of which one month's notice will be given.

TRAFFIC ESTIMATE.

From the Stamp Office returns:—

Omnibuses and coaches, 2,812 journeys per week through the intermediate districts, average returns, £771, equal to, per annum	£40,092	
Estimated Windsor traffic	13,236	
Conveyance of goods, &c.	15,000	
Ditto carriages, parcels, &c.	10,000	78,328
Deduct working expenses, 40 per cent.		31,430
Nett annual profit		£46,898

Which gives upwards of 9 per cent. on the capital of £500,000, but according to the usual form of estimating, by doubling the passenger receipts, would show a return of two-thirds additional.

Applications for shares to be made in the annexed form, to the solicitor, Mr. G. Smith, 24, Golden-square; to the secretary, at the company's temporary offices, 62, Moorgate-street; to Messrs. Sutton, Gribble, and Co., Brokers, Royal Exchange; and to Messrs. Myers and Birbeck, brokers, Manchester.

FORM OF APPLICATION FOR SHARES.

To the Provisional Committee of the London and Windsor Railway.

I request that you will allot me shares in the proposed London and Windsor Railway; and I agree to take all such shares, or so many as may be allotted to me, and to pay the deposit thereon, and to execute the Parliamentary contract and subscribers' agreement when required so to do.

Name .....
Description .....
Residence .....
Date .....
Reference to .....

PARIS AND LYONS RAILWAY (CALON'S COMPANY).

Capital 162,500,000 fr., or £6,500,000, in 325,000 shares, of 500 fr., or £20, each.
Deposit 50 fr., or £2, each share.

PROVISIONAL COMMITTEE.

FRENCH DIRECTORS.

Mons. Henri Barbet, Maire de la Ville de Rouen, Membre de la Chambre des Députés, Commandeur de la Légion d'Honneur.
Mons. Calon, jeune, Banquier, à Paris.
Mons. Leveissière, Négociant en Métaux à Paris, Chevalier de la Légion d'Honneur, et Lieut.-Colonel de la 4me. Légion de la Garde Nationale.
Mons. Alphonse Laurent, Ancien President du Tribunal de Commerce de Blois, Associé de la Maison de Banque Chambert, Lefebre, Cie., Administrateur du Chemin de Fer d'Orleans à Bordeaux.
Mons. le Baron W. de Levenant, Propriétaire, à Paris, Chevalier de la Légion d'Honneur.
Mons. Armand Donon, Associé de la Maison Calon, jeune.
Mons. Luzarches, Ancien Maitre de Forges, Administrateur et Sousmissionaire du Chemin de Fer d'Orleans à Bordeaux.

ENGLISH DIRECTORS.

W. ORMSBY GORE, Esq., M.P., Chairman.

Thomas Chapman, Esq.	Sir R. Jenkins, G.C.B.
Charles W. Graham	W. Mitcalfe, Esq.

BANKERS.

Mons. Calon, jeune	Paris.
London Joint-Stock Bank	London.
Liverpool Union Bank	Liverpool.
National Provincial Bank	Manchester.
National Provincial Bank	Bristol.
Messrs. Smith, Brothers, and Co.	Hull.

ENGINEER—J. M. Rendel, Esq., F.R.S.

SOLICITOR—W. Borradaile, Esq., 20, King's Arms-yard, London.

The incorporation of the above society was passed and registered before M. Guénin, Notaire Royal, at Paris, on the 8th and 9th December last, 1844.

This company has been prepared for some time to tender to the Government for this line according to the conditions originally required, and the directors have resolved to increase the capital from £2,500,000 to £6,500,000, to enable them to meet the new conditions of the French Government, should they determine that the earthworks shall be completed by the company.

The proprietors of original shares are entitled to a preference in the distribution of the additional capital.

Prospectuses and forms on which to make applications for the remaining shares can be obtained at the offices, 19, King's Arms-yard, London.

By order of the board, GEORGE BYAM, Secretary.

PARIS AND LYONS RAILWAY (CALON'S COMPANY).

—Should any unforeseen circumstances prevent the concession of this line of railway this year, the amount of DEPOSIT paid on the shares will be RETURNED to the subscribers. By order of the board,

19, King's Arms-yard, London, March, 1845. GEORGE BYAM, Secretary.

PARIS AND LYONS RAILWAY (CALON'S COMPANY).

—NO APPLICATIONS for SHARES in this company can be received after SATURDAY, the 5th of April next. By order of the board,

19, King's Arms-yard, London, March 29, 1845. GEORGE BYAM, Secretary.

SHREWSBURY AND BIRMINGHAM RAILWAY.

WILLIAM ORMSBY GORE, Esq., M.P., Chairman.
The Hon. R. H. CLIVE, M.P., Vice-Chairman.

John Benbow, Esq., M.P.	Richard Norman, Esq.
W. Rickford Collett, Esq., M.P.	John Pritchard, Esq.
W. F. Black, Esq.	Stephen Phillips, Esq.
James Clay, Esq.	Richard Smith, Esq.
Richard Lloyd, Esq.	R. A. Slaney, Esq.

Sir William Young, Bart.

The committee of the Shrewsbury and Birmingham Railway having seen in some of the newspapers some very gross and false statements, which were read at a meeting held yesterday, at the London Coffee-house, request the shareholders will defer forming any opinion until the General Meeting, which will be called by the committee as soon as the interests of the company will permit them to do so.

WM. ORMSBY GORE, Chairman.
3, Moorgate-street, April 3, 1845. GEO. KNOX, Secretary.

GREAT MEDITERRANEAN AND ADRIATIC JUNCTION RAILWAY COMPANY.

Capital 30,000,000 florins convention (or £3,000,000 sterling), in 60,000 shares of 500 florins convention (or £50 sterling), each deposit 2½ florins (or 5s. sterling) per share.

The object of the company is the construction of lines of railway to connect the port of Genoa with the cities of Turin and Milan, effecting a junction of the latter with the Austrian railway now in progress between Milan and Venice, and thus connecting by railway the Mediterranean and Adriatic Seas. The prospectus will shortly be issued, and, in the interim, applications for shares may be addressed to the joint English solicitors, Mr. E. Smith, 12, Gray's Inn-place, Gray's Inn, and Messrs. Lewis and Ford, 28, Essex-street, Strand, and to the provisional committee, at the offices of the company, 4, Coleman-street, City, from each of whom forms of application may be had.

By order, T. RUSSELL, Secretary.

ARMAGH, COLERAINE, AND PORTRUSH RAILWAY COMPANY.

—Notice is hereby given, that the OFFICES of the COMPANY have been REMOVED to 28, THREADNEEDLE-STREET.—March 20.

CORK, MIDLETON, AND YOUGHAL RAILWAY,

WITH BRANCHES TO COVE AND FERMOY.

(Provisionally Registered.)

TOTAL LENGTH FIFTY STATUTE MILES.

Capital £500,000, in 10,000 shares, of £50 each.

No shareholder to be liable beyond the amount of his subscription.—Interest at 4 per cent. will be allowed on calls until the line shall be made.

Deposit £2 15s. per share, of which £1 5s. must be paid on allotment, and £1 10s. when required by the committee.

PROVISIONAL COMMITTEE.

The Earl of Mountcashel
Lord Viscount Midleton, London
Lord Viscount Ponsonby
Sir Arthur de Capel Broke, Bart., Oakley, Kettering, a director of the Churnet Valley Railway
George Ashlin, Esq. 50, Mark-lane, London
Sir Richard Musgrave, Bart., Toureen, county Waterford
Sir Edw. Synge, Bart., Lislee House, late High Sheriff of the county Cork
Honourable Robert Hare, J.P., Ballymore, Cove
Garrett Standish Barry, Esq., Lemlara, late M.P. for the county of Cork
Sampson T. W. French, Esq. J.P., Cuskiny, Cove
Edward Odell, Esq., D.L. and J.P., Carew's Wood, Castle-martyr
Roger Green Davis, Esq. J.P., Drumdiah, Killeagh, county Cork
Richard Frankland, Esq., Ashgrove, Cove
Nicholas M. Cummins, Esq. J.P., Anne Mount, New Glanmire
Thomas John, Esq. J.P., Manager of the Bank of Ireland, Youghal
Thomas S. Coppinger, Esq., Midleton
James Murphy, jun. Esq. Midleton
William Fagan, Esq., late Mayor of Cork
Francis Lyons, Esq., Cork
Thomas Foley, Esq., Tourtana, Lismore
Robert Holmes, Esq. J.P., Cove
William Lane, Esq. J.P., Vernon Mount, Cork
Henry Barry, Esq., Barry's Lodge, Middleton
Philip Scott, Esq. Cove
Thomas M. Green, Esq. J.P., Killeagh, county Cork
Robert Morrogh, Esq., Douglas House, Cork
Abraham Fisher, Esq., Youghal
Michael Cagney, Esq., Cork

(With liberty to add to their number.)

ENGINEER—Sir John Macneill, C.E., LL.D., F.R.S.

SECRETARY—Bartholomew James Hackett, Cork

SOLICITORS.

Messrs. Pontifex and Moginie, 5, St. Andrew's-court, Holborn-hill, London.
Murdock Green and Samuel P. Townsend, 61, Upper Sackville-street, Dublin, and 9, South Mall, Cork.

BANKERS IN ENGLAND.

The Commercial Bank of London; Glyn, Halifax, and Co., London; the Bank of Liverpool, Liverpool; the Manchester and Salford Bank, Manchester.

BANKERS IN IRELAND.

The Bank of Ireland; the Provincial Bank of Ireland; the National Bank of Ireland; the London and Dublin Bank—and their several branches.

The objects to be attained by this undertaking are of a highly important character, and of great interest to the several towns in the eastern division of the county of Cork, as well as the adjoining counties of Tipperary and Waterford. It will directly connect the city of Cork with the important towns of Youghal, Fermoy, Midleton, and Cove, and become the sole means of transit for goods and passengers to these towns and the adjoining districts.

The line from Cork to Midleton will be twelve-and-a-half miles in length, and will pass near the villages of New Glanmire and Carrigtohil; the passenger traffic on the existing road is not surpassed on many in the kingdom. From Midleton, the line will proceed by Castlemartyr and Killeagh to Youghal, a distance of about fifteen miles, thereby opening a direct communication with the county of Waterford, and passing through a range of country which possesses many natural advantages. Between this and the sea coast is a large and populous district (in which is situate the town of Cloyne), at present dependent upon the roads through Midleton and Cove for intercourse with the city of Cork.

Between Cork and Midleton a branch will be made to the town of Cove, a distance of five miles.

The harbour of Cove is the most important naval station in Ireland, and from its natural advantages must always hold its high position. As a residence during the summer seasons, Cove has long been celebrated; and the daily concourse of visitors to it and the various places adjacent, is not exceeded by that to Kingstown, near Dublin. Even during the winter season, the mildness and salubrity of its climate make it invaluable as a place of sojourn to invalids. The traffic in goods and merchandise between Cork and Cove is very great, and will be much increased when assisted by railway communication.

Near to Midleton, a branch of about seventeen miles in length will be made to the town of Fermoy, thus opening a communication with a rich and populous district, the traffic of which is, by the second report of the railway commissioners, stated to be greater than that of any other south of Dublin, and connecting its great commercial and military centre, Fermoy, with the deep water at Cove, while, beyond the Fermoy-terminus, the towns of Mitchelstown, Kilworth, and Glanworth, will participate in the advantages of the intercourse.

The time which will be necessary for the journey between the several stations on the line may be thus stated:—From Cork to Youghal or Fermoy, and from either of the two last-mentioned places to the other, or to Cove, will occupy less than one hour; and from Cork to Cove, and from Midleton to each of the other towns on the line, less than half an hour.

The surveys and estimates having been entrusted to Sir John Macneil, the utmost reliance may be placed on their accuracy. The estimated cost of the line, including stations, working establishments, &c., will not exceed £10,000 per mile.

The landowners along the line have been consulted, and, without a single exception, are favourable to the undertaking.

At public meetings of the gentry, landowners, and inhabitants, held at Cork, Midleton, and Youghal, the traffic tables and estimates were submitted and investigated, and the project met with unanimous approbation.

The traffic, carefully taken, shows the following results:—

Passenger traffic, at 1½d. per mile	£24,084	6	3
Coach parcels (estimated)	1,145	0	0
	£25,229	6	3
Which, being doubled for increase by railway, gives	£50,458	12	6
Merchandise, at 2d. per ton per mile	17,724	3	4
Mails, at 9d. per mile	3,724	10	0
Cattle, sheep, and pigs	2,001	13	4
Troops, baggage, &c.	2,500	0	0
	£76,408	19	2
From which is to be deducted for working expenses, 30 per cent., or	22,922	13	9
Leaving a surplus of	£53,486	5	5

divisable as a profit amongst the shareholders, and allowing a dividend of 10½ per cent. on the capital.

Applications for shares to be made to, and copies of the prospectus had from, Messrs. John Field, Son, and Bailey, 9, Warnford-court, London; Messrs. Boyle, Low, Pim, and Co., College-green, Dublin; W. A. Browne, and S. R. Healy, Liverpool; Messrs. Railton and Son, and Messrs. Johnston, Bradley, and Walker, Manchester; Messrs. Alsop and Son, Hull; Messrs. Bell and Rhodes, Leeds; L. Wetherburn, Huddersfield; P. Nightingale, Wakefield; W. H. Cowling, York; T. Kell, Birmingham; James Redford, jun., Glasgow; and the secretary and solicitors, at the offices, 5, St. Andrew's-court, Holborn-hill, London; 9, South-mall, Cork; 61, Upper Sackville-street, Dublin; and Youghal.

FORM OF APPLICATION FOR SHARES.

To the Provisional Committee of the Cork, Midleton, and Youghal Railway, with Branches to Cove and Fermoy.

Gentlemen,—I hereby request you will allot me shares in the above railway; and I undertake to pay the deposit of £2 15s. per share upon same or such lesser number as you may allot to me, and to sign the Parliamentary contract and the subscriber's agreement.—Dated this day of , 1845.

I am, Gentlemen, your obedient servant,

Name .....
Description .....
Residence .....
Reference* .....

* No reference but to a banker, or a member of the provisional committee, or the solicitors in London or in Ireland, will be attended to.

CORK, MIDLETON, AND YOUGHAL RAILWAY,

with BRANCHES to COVE and FERMOY.—NO APPLICATIONS for SHARES in this railway will be received after TUESDAY NEXT, the 8th inst.

9, Warnford-court, Throgmorton-street, April 3, 1845.

WARWICK AND CHELTENHAM JUNCTION RAILWAY.

—The ALLOTMENT of the SHARES in this company will take place on WEDNESDAY NEXT, the 9th inst., on or before which day all applications must be made. Holders of shares in the Coventry, Bedworth, and Nuneaton, and the Coventry and Leicester Junction Lines, will be entitled to one share in the present undertaking for every three held by them in either of the two former, provided they make application, and produce their scrip to the secretary, at the office of this company, No. 3, Church-court, Old Jewry, London, before the day of allotment.

London, April 4, 1845. R. HARTLEY KENNEDY, Chairman.

NANTES, ANGERS, AND TOURS RAILWAY.

Capital 60,000,000 fr., or £2,400,000, in 120,000 shares of 500 fr., or £20, each. Deposit £2 per share.

Prospectuses will be duly issued; in the meantime applications for shares may be made to the provisional committee, at the office of their solicitor, George Ogle, Esq., 4, Great Winchester-street, London.

ENNISKILLEN AND SLIGO RAILWAY.

(REGISTERED PROVISIONALLY.)

Capital £600,000, in 12,000 shares, of £50 each.—Deposit £2 10s. per share.

No person liable beyond the amount of his share.

PROVISIONAL COMMITTEE.

Lord Viscount Palmerston, G.C.B., Carlton-terrace, London, and Broadlands, Romsey, Hants
The Viscount Clements, Lough Rynn, county of Leitrim, and Killadoon, county of Kildare
The Hon. Edward Wingfield, Moyview, Ballina, and Cork Abbey, Bray
The Hon. Charles Knox Stuart, Castledawson, county of Londonderry
John Wynne, Esq., Hazlewood, Sligo

Deputy Lieutenants of the county of Leitrim.

William Irwin, Esq., Kilbracken, Carrigallen
Pierce Simpson, Esq., Cloncorick Castle

Directors of the Dublin and Drogheda, Dublin and Belfast Junction, and Dundalk and Enniskillen Railways.

Richard Wright, Esq., 2, Pembroke-place, Dublin
George Hoyte, Esq., Edenmore, Raheny
Thomas Mooney, Esq. Kilmacud House, Dublin
William Henry, Esq., Mountjoy-square, Dublin

Directors of the Dundalk and Enniskillen Railway.

Thomas M. Gresham, Esq., Raheny-park
William Kilpatrick, Esq., Dundalk
John Straton, Esq., Dundalk
Peter Russell, Esq., Dundalk

John Hamilton Peyton, Esq. J.P., Port, Carrick-on-Shannon
Francis Waldron, Esq. J.P., Drumasna
George Beatty West, Esq. J.P., Drumdarkin, Mohill
Lewis Algeo, Esq. J.P., Glenboy
Charles E. Peyton, Esq., Castle Carrow, Carrick-on-Shannon
William J. Peyton, Esq., Summer-hill, Carrick-on-Shannon
George Digby, Esq. J.P., Drumdaff, Roscommon, and No. 27, Upper Rutland street, Dublin
Ormsby Jones, Esq. J.P., Stredda, Sligo
Thos. W. Lloyd, Esq., Ballycullen, county Sligo, and Rathgar, county Dublin
Captain Bowen, R.N., Laurence-town-house, Banbridge
Thomas Murray, Esq., Edenderry
Bernard Peyton, Esq., Caldra, Carrick-on-Shannon
Robert Smyth, Esq., Clantilew, Portadown
John Overend, Esq., Portadown
Edward Kelly, merchant, Sligo
Thomas Kernaghan, merchant, Enniskillen

(With power to add to their number.)

ENGINEER—Sir John Macneill, LL.D., F.R.S., M.R.I.A.

SOLICITORS.

James M'Fadden, 115, Stephen's-green, Dublin.
Thomas Mostyn, the Mall, Sligo.

SECRETARY—Percy Simpson, Esq., 115, Stephen's-green.

The object of the Enniskillen and Sligo Railway is to form a trunk line to connect the northern and eastern portions of Ireland with the western and north-western, and, by means of the Ulster Railway, and the Ulster Extension, Dublin and Belfast Junction, Londonderry and Enniskillen, and Dundalk and Enniskillen Railways, all of which have been approved of by the Board of Trade, and of the portion of the Newry and Enniskillen Railway, which has been also approved of, and of the Dublin and Drogheda Railway, to bring the ports of Sligo and Ballyshannon in direct communication with the ports of Belfast, Derry, Newry, Dundalk, Drogheda, and Dublin—thus affording by the railway to the eastern ports the quickest mode of transit for goods and passengers to England, and by the northern ports to Scotland, and probably as direct a communication by the port of Sligo, for the trade with America, as can be found at any other port on the western coast of Ireland.

Application for shares to be made to Messrs. Sutton, Gribble, and Co., brokers, Royal Exchange, London; Mr. Robert Corbett, 5, College-green, Dublin, or any other of the Dublin brokers; Messrs. Tate and Nash, Bristol; Mr. Theobald Bushel, North-street, Belfast; Messrs. Maceman and Auld, 28, St. Vincent-place, and Mr. James Watson, brokers, 1, South Frederick-street, Glasgow; Mr. Andrew Moffet, broker, 21, George-street, Edinburgh; or the solicitor or secretary, of whom copies of prospectuses and forms of application can be obtained.

PILBROW'S ATMOSPHERIC RAILWAY AND CANAL PROPULSION COMPANY.—*(Provisionally Registered.)*

Capital £120,000, in 12,000 shares, of £10 each.—Deposit £5 per share.

PATRONS.

The Most Noble the Marquis of DOURO.
The Right Honourable the Earl of BESSBOROUGH.

DIRECTORS.

The Right Honourable the Earl of ESSEX, Chairman.
George Buckley Bolton, Esq.
Lieutenant-Colonel Gilliess.
Captain Britten.
Anthony White, Esq.

RESIDENT DIRECTOR—Dr. John Grigg Hewlett.
AUDITOR—Thomas Edwards, Esq.
CONSULTING ENGINEER—James Pilbrow, Esq., C.E.
ACTING ENGINEER—Frederick Braithwaite, Esq., C.E.
STANDING COUNSEL—Thomas Webster, Esq.
SOLICITORS—Messrs. White and Borrett.
SECRETARY—Charles Collins, Esq.
BANKERS—Messrs. Cocks, Biddulph, and Co., 43, Charing Cross.

OFFICES, 6, KING WILLIAM-STREET, LONDON.

The prominent advantages of this system of atmospheric traction are, that the continuous valve is dispensed with—roads are crossed upon a level without interruption of main—one atmospheric railway can be intersected by another, thus saving bridges, approaches, and leakage—and a stationary engine every ten miles is sufficient.

The system combines extreme simplicity with extreme efficiency, and that obtained with a small comparative expense in working and construction.

It is estimated that a saving altogether upon the other plans of atmospheric railways (having the continuous valve), would be nearly £3,000 per mile: two mains or lines can, on this plain, be laid for little more than the cost of one, upon the other plans.

Increased safety is insured, also obstruction and destruction by weather and other sources are placed beyond probability by the mains being buried, &c.

The objects of the company are to purchase the patentee's right for the United Kingdom, to grant licenses to railway and canal companies to use the invention, or lay down the works under contracts with the different companies; and, in the first place, to procure an experimental line in the neighbourhood of the metropolis, if found desirable.

The source of income is unlimited, and the expenses, with the exception of the purchase of the patents, and laying down the experimental line, must necessarily be merely nominal.

A model, upon a scale of one inch to the foot, may be seen at work on Wednesdays and Thursdays, between twelve and three o'clock, at the company's offices, by application to the secretary or officers of the company.

FORM OF APPLICATION FOR SHARES ADDRESSED TO THE SECRETARY.

To the Directors of Pilbrow's Atmospheric Railway and Canal Propulsion Company.

Gentlemen,—I request you to allot me shares, of £ each, in the above company, and I undertake to accept the same, or any smaller number of shares that may be allotted to me, and to pay the deposit thereon, and to execute the Deed of Settlement when requested. Dated this day of 1845.

Name .....
Address .....
Profession or trade .....
Reference .....

SEYSSEL ASPHALTE COMPANY—"CLARIDGE'S PATENT."—*Established* 1838.

This Asphalte is a bituminous limestone, obtained from an inexhaustible mine at Pyrimont, in the Jura mountains. Previously to its introduction into this country, in 1838, the material had been used for many years in France, and, from its great utility, was extensively patronised by the Government of that country.

Among the various uses to which it can be applied, the following may be enumerated:—For foot-pavements, public and others; in the carriage approach to mansions, garden-walks, and terraces; the flooring of kitchens and other basement offices; also of coach-houses and stables, dog-kennels, barn-floors, cow-houses, piggeries, poultry-houses, tan-rooms, and maltings. For roofing, covering of railroad and other arches, the lining of underground cellars near rivers, to prevent the ingress of the tides; also in covering the ground line of walls, to prevent damp rising (*this application of the Asphalte of Seyssel is particularly recommended by the Commissioners of the Fine Arts*), thereby rendering the basement stories in the worst situations both dry and warm. It is an excellent cement, as applied to docks, breakwaters, or walls built for resistance to the encroachments of the sea. For lining of tanks, fish-ponds, and other hydraulic purposes.

I. FARRELL, Secretary,
Seyssel Asphalte Company's Works, "Claridge's Patent,"
Stangate Depôt, London.

*** MERCHANTS AND SHIPPERS SUPPLIED FOR EXPORTATION.

Books of Instructions for Use, may be had of all booksellers in town and country, price 1s.

NOTICE TO INVENTORS.—OFFICE FOR PATENTS

OF INVENTIONS AND REGISTRATIONS OF DESIGNS, 14, LINCOLN'S INN-FIELDS.—The printed INSTRUCTIONS *gratis*, and every information upon the object of PROTECTION for INVENTIONS, either by Letters Patent or the Designs Act, may be had by applying personally, or by letter, pre-paid, to Mr. Alexander Prince, at the office, 14, Lincoln's Inn-Fields.

ON ATMOSPHERIC RAILWAYS.

BY DR. J. G. HEWLETT.

[The great interest which attended the publication of the following paper, and our inability to furnish copies to many who were desirous of procuring them, has induced us to reprint it. Some conti: nons observations will be given in next *Mining Journal*.]

"In no subject, is an active, energetic, and commercial people more deeply interested than in the means for *safe* and *expeditious* intercommunication; and, as we have long maintained a high pre-eminence among the civilised nations of the earth, for our zeal, enterprise, and commerce, we can only expect to secure these honourable distinctions by affording every possible encouragement to those inventions and discoveries which have a tendency to bring the arts and sciences to the highest degree of culture and practical utility. The truth of this statement has been admitted; and yet a strange, but most decided, opposition has been raised to almost every remarkable invention that has been introduced during the last fifty years. The proposed locomotive steam-carriage was most violently opposed by the devout lovers of stage-coach travelling. The *olden* times, and the *olden* ways, were so much admired, that any innovations on the *olden* practices, were dreaded with a terror—a little less than that felt at an approaching earthquake. That the whole host of *interested parties* should be opposed to a new and improved mode of travelling was no more than might be expected, because the doctrine of vested rights, as maintained and practically carried out in this country, had ever been a mighty barrier to all social and moral improvements. But that parties, who had no such rights to be jeopardised or damaged, should be opposed, must be a matter of surprise to every reflecting mind. For not a few, both in Bristol and Birmingham, were to be found, who, on hearing of the respective railways proposing to accomplish twenty miles an hour, said, with much complacency—"Let others venture their necks who please, but as for me I am quite contented to travel at the rate of ten miles an hour, including all stoppages, and think it is speed enough for any reasonable man." And so it was, according to the means employed—means which involved no small amount of suffering and cruelty to animals. But now that locomotive power has become a general mode for the transmission of men and chattels, the very persons who were so timid, and so dreading consequences, are now among its warmest advocates and substantial patrons. Yet, this must not be regarded as an *ultimatum*; but merely a step in the ever advancing course of improvement. Seeing how former inventions have been treated, on their first introduction to public notice, by the populace at large, it is no more than experience has taught us, to expect that every bold invention, developing some new power, should meet with a similar treatment: and, upon this principle, a host of prejudices are arrayed against atmospheric railways. The prejudices which have existed against former inventions, and subsequently giving way to approbation and admiration of the highest order, induce the writer of this paper to think, that those prejudices arose from a want of information, and a consequent misapprehension of the whole invention. This is certainly the case in reference to many who are opposed to atmospheric railways; they talk of accidents occurring by this mode of travelling which must, of necessity, be more fatal than accidents by the locomotive power. No mode of travelling can pledge an entire exemption from accidents. A small piece of orange peel on our ordinary pavements may occasion the death of the man who accidentally puts his foot upon it. But this is very different from a company of men looking pale with fear, dreading that a shower of pumpkins from the moon will dash them to pieces, when they have not as yet any credible testimony that there are pumpkin gardens in the moon. With the utmost respect for the fears of the timid, and the misconceptions of the uninformed, we venture to think, that a few plain matter-of-fact statements will have a tendency to dissipate their fears, and correct their misconceptions. Correct definition is the foundation of all sound information. The terms constantly employed on this topic are "locomotive power" and "atmospheric principle or power." Locomotive power is the mechanical force identifying itself with the carriages moved. Atmospheric power is a mechanical force acting on the carriages through different media—a force renewable at intervals on the line—so that the atmospheric power is often classed with the stationary, as the impulse, or cause of motion, is only at intervals, as in some railways, such as Blackwall, the rope by which the carriages are moved is put in motion by a power that is entirely fixed and distinct from the carriages themselves. The history of atmospheric railways will satisfactorily show that the principle is not so new—and, consequently, the plans constructed on it by no means so *jejune* and immature—as some imagine. If seven cities have contended for the honour of being the birthplace of Homer, it is no wonder that many persons who have had thinkings and imaginings on the subject should contend for the honour of being the inventor of the atmospheric mode of propulsion. There are some difficulties in tracing this Nile to its right source; the first authentic data, however, which we have immediately connected with the subject, is the publication of a pamphlet in 1810, by Mr. Medhurst, in London, in which he proposed the idea of employing the power of the atmosphere created in an extended tube laid between the rails, and communicating the moving power thus obtained to propel carriages travelling on a road. Mr. Pinkus, however, asserts that Mr. Medhurst only proposed the impracticable part of Papin's plan of forcing air under the compression of many atmospheres, as several others before him had done, adding, at a subsequent date, the idea of moving a piston through an underground tunnel, by forcing in air behind it, from distances of twenty miles apart, and, by means of such piston and tunnel, impelling passengers and goods. Medhurst's first plan was to convey letters and goods by means of rarefaction and compression of air in a channel six feet high and five feet wide, contained in a paved road or iron railway. Mr. Medhurst, it should be observed, took out no patent, performed no experiments, and distributed his pamphlets chiefly among his friends; so great controversy has always existed as to the legitimacy and extent of his claims. In 1824 he contested his claims to invention, in a paper war with Mr. Valance; and in 1840 Mr. Pinkus contested them. In 1817 Mr. Lewis proposed a plan, which was a modification of that of Medhurst's. In 1824 Mr. Valance took out a patent for his method of an underground tunnel, also availing himself of rarefaction and atmospheric pressure. Mr. Valance made experiments with his system at Brighton, but does not appear to have been successful, so that his patent produced him no return, while Mr. Medhurst claimed priority of the invention. There is, however, strong reason for deciding that Mr. Valance first proposed employing the power of the atmosphere against a *vacuum* for railway purposes, as Mr. Medhurst did a *plenum*. In 1828 Mr. Medhurst re-published his pamphlet of 1810, and he then proposed to use a tube comparatively much smaller, to enclose a piston in it, and to transmit its action to the outside through a longitudinal opening: he proposed also to have stationary engines twenty miles apart, for forcing in air. Of this plan he published a drawing, showing a long box, and a pipe suspended over a channel of water, in order to make a water joint or valve. According to the assertions of some of his friends, he made experiments with this and failed, from the impossibility, explicitly says one, of making the continuous communication from the inside of the pipe to the carriage tight enough to allow a useful degree of rarefaction to be produced; Mr. Pinkus, however, says he was well informed that Mr. Medhurst never made a single experiment. The suggestion of that mode of railway transit appears to be fairly due to Mr. Medhurst; the important step of creating a vacuum before the piston belongs to Mr. Valance, while the further improvement of attaching the piston to an external carriage is disputed by Mr. Medhurst and Mr. Pinkus; Mr. Medhurst's pamphlet is certainly the *first* publication, while Mr. Pinkus quotes no evidence as to his own claims. On the 1st of March, 1834, Mr. Pinkus brought out his first patent; and in this he proposed as a valve, one in the form of a cord or rope, and which he calls a valvular cord. Mr. Pinkus states that in 1830 he had again prepared fresh plans and specifications, such as are now enrolled, and that he had exhibited them to his friends, and in 1833 commenced his patent. In 1834 he constructed a large working model, which was publicly exhibited in Wigmore-street; according to the Samuda advocates, the experiments were a complete failure; but in 1836 an association was formed for working under Mr. Pinkus's principle, and contracts were made for works, to demonstrate the principle. In 1836 Mr. Pinkus took out another patent for this country, with improvements, and also for foreign countries; in this the valve was formed of iron plates, secured to felt, to lay against pieces of wood, which he proposes to fix to the inner sides of the trough, as presenting a smoother surface than cast-iron; he also described a spring copper valve, fastened at its foot to the pipe, and meeting at the top, in the shape of an inverted V. The system was then called the pneumatic system, and excited a good deal of attention, and much controversy. At this period works were designed to be applied on the West London Railway, at Wormwood Scrubbs; the works nearly completed a line half a mile in length, formed on the margin of the Kensington Canal, which was united with that line of railway; Messrs. Samuda and Hague were the contractors for the engines, the former also for the mains and valves. Mr. Clegg is claimed by Mr. Pinkus as having been at that time confidentially employed and consulted by him, and as having witnessed the progress of the experiments; to these assertions of Mr. Pinkus we have not seen a satisfactory answer; certain it is, that on the 3d of January, 1839, a patent was taken out by Messrs. Clegg and Samuda, from which practical results have been obtained. The grand principle of the improved atmospheric plan, up to this period, was in hermetically sealing the valve with a composition each time the train passed. In 1838, experiments had been made on this plan at Chaillot, through the exertions of Mr. James Bonfit. Next, an extensive experiment was performed on Wormwood Scrubbs, on the West London Railway, Mr. Pinkus's apparatus having been removed, his company falling to the ground for want of funds. The portion of the line selected was half a mile long, with a rise of 1 in 120 for rather more than half the distance, and 1 in 115 for the remainder. On the 11th of June, 1840, this line was open for experiments, and these were attended with sufficient success, and so far sanctioned by the approval of eminent engineers, as to justify further proceedings. We should observe, that on the 3d August, 1839, Mr. Pinkus obtained a third patent, in which he describes a valve and composition precisely similar to Clegg and Samuda's; on the 24th March, 1841, a fourth, where he proposes a gaso-pneumatic power. About 1841, Mr. Bonfit set up at Havre, in the factory of M. Nilbus, machinery for manufacturing Clegg and Samuda's valve. At the close of 1843, Clegg and Samuda's plan was laid down on the Dalkey line for the short distance of one mile and a quarter; this is a continuation of the Dublin and Kingstown line. And in the subsequent history of atmospheric railways, we have last—but, as we imagine, not least—the extraordinary but simple invention of Mr. James Pilbrow, which obtained a patent on the 18th November, 1844; this invention does away with the continuous valve altogether, having many other advantages which preceding inventions cannot claim.

As the two plans which now chiefly engage the attention of the public are that of Messrs. Clegg and Samuda, and that of Mr. Pilbrow, we purpose, in a subsequent part of this paper, to give a minute description of each of these plans, and a comparative estimate of both. At present we invite your attention to the general advantages of the atmospheric system above steam locomotive power. *A diminution of expenditure* is one of the most obvious advantages. In the original outlay there is not a necessity for that extensive levelling as is now required; engines of very great power will not be needed; the wear and tear of materials will be diminished; and, by consequence, the rates of charges for travelling will be lessened, and cheap travelling will be secured with a certainty of *increased safety and comfort*. This advantage of *safety* is one of paramount importance. The atmospheric system precludes all the terrible calamities of bursting boilers and burning trains, with which the public has become painfully familiar. Running off the line is also avoided; since, in the atmospheric system, the impelling power is at the centre of gravity, and must, from its action, keep the train on the rails. A collision of trains, from which such disastrous results have arisen, cannot possibly take place on the atmospheric principle. Then, not to enter into any metaphysical discussion of the question, how much the very consciousness of safety promotes our comfort—it may suffice to say, that the atmospheric system offers a full enjoyment of the pure atmosphere of heaven as you quietly glide on by an invisible power, and entire freedom from the clanking of cumbrous machinery, flying sparks, hot cinders, and strong sulphuretted hydrogen. Another advantage is, *increased speed*—the average rate of travelling by the atmospheric power being fifty miles an hour, while the highest velocity of travelling on the fastest line, by steam, is thirty miles an hour; and, in a country where time is appreciated as property of great value, this must be considered of paramount importance, did it exist alone; but, when speed can be secured at less expense, and with increased safety and comfort, no doubt can exist, to which system the most decided preference is to be given. The plans of atmospheric railways, now fairly before the public, claim our particular attention. The first we notice, is that of Clegg and Samuda; and we cannot do better than give the description drawn up by M. Arago. We shall now say a few words on the manner in which they have contrived to establish an immediate and unyielding connection between the piston, on which the atmosphere acts as a moving power, and the leading carriage of a train running outside the tube on the ordinary rails. This inflexible connection, of which we have just spoken, could not be established conveniently, except by means of a metal rod passing from the piston to the carriage. Now, as it is necessary that this connection should be maintained during the entire course of the piston, there must be a longitudinal opening in the upper surface of the tube. It is along this upper slit that the metal arm travels, by means of which the movement of the piston is communicated to the leading carriage of the train, and thence to all the others. This rod, or arm, has been very justly called the connecting or moving arm, or plate. But, it may be asked, if there is an opening in the tube, how is the vacuum to be produced? We give the reply. The opening is continued the whole length of a valve, by which it is hermetically closed; the vacuum can be thus successively produced in that part of the tube to the left and right of the piston, as in the closed tube, of which we have spoken in the commencement. By a movement, to which we shall presently refer, the valve is partially opened near the piston, so as to let the connecting plate pass; after which it immediately falls by its own weight. This is the most delicate part of the apparatus. If the valve accurately closes the opening, a perfect vacuum is produced and maintained, by which we obtain a permanent and powerful moving force. On the contrary, should the valve allow the air to enter by any fissure, we cannot produce a sufficient vacuum, but by having recourse to a very powerful air-pump—and, moreover, this imperfect vacuum can only be supported by the continual action of the pump. The longitudinal valve, which closes the opening of the tube, is formed of a strip of leather of indefinite length, strengthened above and below by a series of iron plates of about a foot long, and not leaving a space between them of more than three-eighths of an inch. Weight is thus given to the valve without destroying its elasticity. The leather is closely and hermetically fastened by one of its edges to one side of the opening. The other edge remains unattached and moveable; and, when the valve is closed, it merely rests on the second lip of the opening, which has been previously covered in its entire length, by a composition of wax or tallow. When the valve opens, that edge of the leather fastened to the tube bends, and thus acts as a true hinge The valve is never raised to a perpendicular position; its movement never exceeds an angle of 45 deg. The mere falling of the valve by its own weight does not give it sufficient adherence to the edge of the opening, so as to prevent the entrance of air into the tube; therefore, it scarcely resumes its place before it is heavily pressed by a wheel fixed at the back of the leading carriage, to which also is attached a cylinder filled with burning charcoal, for the purpose of melting the composition of tallow and wax, by which the valve is held down. This is a full description of the Clegg and Samuda atmospheric railway. Did time allow, we might also notice a similar plan by M. Hallette, of Arras. We come now to notice the invention by Mr. Pilbrow, C.E., for which a patent has been taken out. Now, this invention does not appear to be, like many of its predecessors, a mere improvement in some *mechanical detail*, but seems rather to be a new creation—a new system altogether. It *might* be asked, where Clegg and Samuda's patent differs from Pinkus's, &c., or what have Clegg and Samuda done? but no one will find it necessary to investigate far to discover the difference here—no one will ask that question as to Pilbrow's. By this plan, the necessity for the continuous valve running along the upper part of the tube is entirely avoided; the connection between the propulsive principle within and the carriages without being obtained in a manner entirely distinct. The propulsion tube, instead of being broken, or stopped at intervals of a few miles, extends unbroken for the whole distance. At intervals on the top of the propulsion tube—say, every thirty feet—there are placed boxes and supports. Within these boxes are cogged wheels or smooth-surfaced wheels (a combination of the two, as the model is now before you), working horizontally on an axle, or shaft, the upper portion of which passes through an aperture in the top of the box, and at the outside or above these boxes, the same axles are made to bear rollers or wheels similar to those inside the box. The passages through which the shafts pass are rendered air-tight by the shoulders or flat fillet turned upon the shafts. [The lecturer referred to diagrams.] Attached to the propulsion piston is a long rod, or bar, nearly fitting the small square channel, or tube, cast upon the propulsion tube, and, running along with the piston, is conducted by this smaller tube between the lower wheels. Either side of this bar is covered with cogs, or is smooth, or a combination of the two, as the case may be [the lecturer referred to diagrams and model], corresponding with the surface of the wheels within the boxes above described. It should be mentioned, also, that these wheels, or rollers, are made to project in a slight degree within the smaller tube. [The lecturer pointed out the distinction between the adhesion and cog plan; the latter not being indispensable, but, on the contrary, arrangements which many prefer.] As to the model in particular, which meets all the objections raised against other forms or arrangements of this invention, the manner of working the apparatus is simply this:—the air being exhausted from the propulsion tube, the piston, with its rod attached, is moved along inside it by the pressure of external atmosphere; and, as it moves, the rod works on the wheels on the inside, turns them round, and, as they turn the wheels outside, the boxes turn also. These external wheels are then made to act upon the train, by means of a rod attached to it, similar to that attached to the piston within; and thus, as the piston moves along inside the tube, the first carriage of the train moves along also over it outside the tube, through the medium of this double set of wheels and rods. In attempting to give a comparative estimate of these two plans, it is right to state that Clegg and Samuda's plan has most of the general advantages which atmospheric railways have over the present locomotive principle. The great distinction, however, between the system of Messrs. Samuda and that of Mr. Pilbrow is this—that in the former the connection between the carriage train and the propulsion piston is direct; in the latter it is indirect, a third medium being employed. Another important distinction is that the Samuda system has the propulsion tube aboveground, and has insuperable difficulties in crossing roads, and in intersecting other lines; the Pilbrow invention placing the tube below the surface, gets rid of all the objections in regard to crossing and diverging lines from the main trunk. The continuous valve of the Samuda plan must necessarily occasion much leakage, while the Pilbrow plan, dispensing with the valve altogether, no leakage from that cause can possibly arise. The leakage of Samuda's plan is equal to 5-horse power per mile, but Pilbrow's only 2½-horse power during the whole time of working every ten miles; the Samuda plan requires an exhausting engine at short intervals of about two miles and a half; the Pilbrow plan can be worked with only one engine at the interval of ten miles. The Samuda plan is remarkably *complex*, and, therefore, may be subject to frequent interruptions for repairs. As M. Arago inquires—"Can we hope for future success from a system, into which enters, as principal agents, a strip of leather of immense length, a composition of wax and tallow, and a hot iron to dissolve the wax?" Now, the Pilbrow plan is remarkable for its *simplicity*, and the fewness of agents employed. It is much to be lamented that the Pilbrow plan has been attacked, and difficulties ascribed to it, for which no grounds whatever exist—difficulties which have no existence whatever, but in the imagination of the objector. Even these imagined difficulties must be frankly met, such as "the fine ground metallic surfaces of the wheels soon being injured;" "the friction and wear of the spindles by dust;" but the most formidable objection was stated against the use of cogs—that great speed would certainly break or strip the cogs. Now, the inventor has stated in his pamphlet, and in *this room* (January 8), that you may dispense with the cogs, and make use of adhesion, or a combination of the two, at high velocities, though it is right here to state, that an experiment has been made with the cogs at the rate of fifty-five miles per hour, and they did *not* break or strip. It, however, would be perfectly useless, to spend time in refuting objections, which have been either anticipated or already proved groundless."

NEW SAFETY-VALVE FOR STATIONARY ENGINES.

In 1834, Mr. Bodmer, of Manchester, invented an indicating safety-valve, intended particularly for a stationary-engine; at that time, though fully specified, it does not seem to have met that attention which its importance at least demanded. The chief features of the invention are a pair of equilibrium pistons united by a rod, between which is the steam-pipe; the lower piston is a little larger than the upper, so as to allow a slight preponderance downwards, while there is no weight, except that of the valve itself, to keep them in their place, but no pressure comes upon them, except that of the steam, which, passing on both pistons equally, moves neither. This may be called the main valve, there being also two others subsidiary to it, one serving the purpose of an indicator; and when the pressure reaches its highest limit, allowing a small escape through a channel on the under side of the main piston, which, being no longer *in equilibrio*, is pressed up. Immediately below the upper piston is a ring of large apertures, and the steam escapes by them into the air, by an area larger even than that of the steam-pipe. These are the chief peculiarities of the invention, but to understand its relative advantages it will be necessary to enter into more minute detail. The cylinder of the valve is mounted upon the cross-plate, supported by two other cylinders, fixed on two flanges or sockets fastened to the boiler; each of these cylinders has another valve placed in them, and are open at their lower ends to admit steam from the boiler. The piston safety-valve fits accurately in the upper part of the cylinder, and is connected by the rod to a second piston placed below the opening of the steam-pipe, and working steam-tight in the lower part of the cylinder, and it is of a little larger area than the piston. The steam contained in the cylinder between the valve and the piston, exerts its elastic force against each of them, and, from the large area of the piston, depresses it, and, by means of the connecting-rod, draws down the rod upon the shoulders, and thereby closes the cylinder steam-tight. The piston is connected with the rod, which passes through the plate, and its end serves as an index to the steam guage; this piston is kept down by a helical spring, capable of contracting under a pressure of from 5 lbs. to above 50 lbs. upon the square inch, without breaking. The ball valve is depressed by the rod passed through the plate, which has a lifting screw on its end; this valve is kept down upon its seat by a helical spring, calculated not to give way to a pressure under 51 lbs. upon the square inch. Supposing, the pressure of steam on the boiler to be only 5 lbs. upon the square inch, the piston will not be affected, but as the pressure increases, the piston will rise in the same proportion, the spring giving way; and when the pressure exceeds 50 lbs., the piston will have risen in the cylinder until the opening has arrived at the groove or steam-way, which leads from the cylinder to the under side of the piston; the steam will, therefore, escape from the cylinder along the passage, and fill that part of the cylinder below the piston, and lift it, and force up the valve, when the overplus steam will immediately escape. As soon as the pressure falls below 50 lbs., then the spring forces down the piston, and closes the aperture, when the pressure of the steam will again exert its force upon the upper side of the piston, draw down the piston-valve, and prevent the further escape of the steam; and the small portion of steam contained in the cylinder below the piston may be allowed to condense, or escape through a small aperture to the atmosphere. Supposing the valve to get out of order, or not work properly, the other valve will act as a second safety-valve, its spring giving way under a pressure exceeding 51 lbs. to the square inch, when the valve will rise, and allow the steam to escape up the passage to the under side of the piston, and it will be raised as described above. When the engineer wishes to open the safety-valve, he has only to turn the lifting screw, which will release the valve, and allow the steam to act upon the piston, as before stated.

IMPROVEMENTS IN PISTONS.—An action to try the validity of a patent was argued before Mr. Justice Wightman during the last Spring Assizes. The plaintiff, Mr. Goodfellow, had been a workman in the establishment of Messrs. Ashton, of Hyde, and while in that employ invented considerable improvements in metallic pistons. When the steam-engine was first constructed, the piston was a mere block of wood, fitted as tightly as possible into the cylinder in which it was to work, but, being found to work badly, it was subsequently covered with leather. That plan being also considered objectionable, from the loss of pliability in the leather, another improvement was designed, by the piston being made of metal, with a groove in it filled with hemp; the elasticity, however, of the hemp could not be preserved, and eventually a metallic piston was discovered with a metallic packing. It was on this latter adaptation that the plaintiff had made his invention, the peculiarity being that by a combination of the three perfect annular springs, between a top and bottom plate of metal, a pressure was obtained upwards and downwards, and also against the sides of the cylinder, so as to constitute a perfectly steam-tight piston. The specification was enrolled, the patent obtained and exercised, undisturbed, by the defendant, a Mr. Swinglehurst, had infringed it. The invention had become of very general use on railways and other establishments, and its merits universally admitted. On the part of the defendant, it was urged, that the invention was not new, and several witnesses were produced to prove the adoption of its main features long before the patent was obtained. It was also contended, that if new, it had not been infringed, as the contrivance of the defendant differed materially in its chief details. The judge eventually returned a verdict for the plaintiff, damages, 1s., thus affirming the validity of the patent. The objection raised by the defendant as to the insufficiency of the specification, was reserved for future adjudication.

IMPROVED RAILWAY CARRIAGE.—A carriage is now building for the Antwerp and Brussels Iron Railway, which is to convey eighty-four passengers; it is to rest on two platforms, each on one pair of wheels. Every precaution has been taken to facilitate the motion of this leviathan, even on the sharpest turning of the railway.

LEVIATHAN AIR ENGINE.

[FROM A CORRESPONDENT.]

A most stupendous construction of this nature has been lately made by Prof. Reinagle, in elucidation of a principle as novel, as its power is tremendous. The inventor is securing patents in every civilized country for this discovery, and this will obviously account for our not entering into a more definite description of its component parts. At present this unlimited power is obtained by two distinct modes, unaided by rarification, which is a third and independent principle.

There are artificial lungs, the providers of the power and first action, as in the animal system, which send highly condensed air into a recipient, a globe of strong metal or a cylinder, which to the body of the engine is as the heart is to animal life. Air-tubes conduct the vital power to this ever-receiving and ever-ejecting vessel. From it the engine is fed by a tube, whose capacity is about one-sixth of those which receive the condensed air as leaders. Two metre air-balls are used, one next the globe or cylinder, which is called the heart. These are the two great ventricles. To each of these is employed a stop-cock, with a graduated deal scale up to 90 deg. Beyond these is placed a third stop-cock, with a long arm, or lever handle. This is also regulated by a similar graduated scale. When the air is turned on by opening these several valve-cocks to the proper points, a handle is pressed by the engineer, which opens a valve like an air-gun valve, and the engine is instantly set in motion.

The present engine has a double-crank action, but for general purposes the professor has employed a three-throw crank, which will be worked by air vessels slung, which rise and fall on the revolution of the cranks. On the top of the lift of these air vessels, which are small, an opening in a small fixed cylinder, which the before-named vessels work upon, lets loose the surplus air, driven in by air-gun velocity. The present engine stands, *per se*, (that is, not including the condensed air-cylinder, nor the air-condensers, which are eight feet high,) upon a space not exceeding two feet square; and its power, were the axle in due proportion as well as the bearings, is no less than 568 horses. The air-condensers will perform their duty for about two hours, and provide ample air to propel a train of eighty tons at thirty-five miles per hour. According to the weight used so becomes the increase of the power. To those now made, and made of *wood*, 610 lbs. is employed to each compressor, while 1000 lbs. or 1500 lbs. could be used if desired. When the falling body within has done its duty, in half a minute each of as many air-condensers as the inventor may choose or require to employ, can be re-set in action for two more hours, and so on *ad infinitum*. The proportion of what Professor Reinagle denominates the heart of the machine is 1-23rd of the cubic bulk of the air contents of the pair of lungs or air-condensers—*ergo*, when it is once filled, he has a disposable power, working, when he likes, up to twenty-three atmospheres; and this can be maintained for centuries without waste or failure; that is to say, a power of air is supplied equal to that which is dispensed, without the slighest variation, while it costs absolutely nothing to obtain this condensed air. Professor Faraday, having seen the drawing, and heard the theory and practice of this invention explained, complimented the inventor by declaring, that he had discovered perpetual motion of the most terrific description.

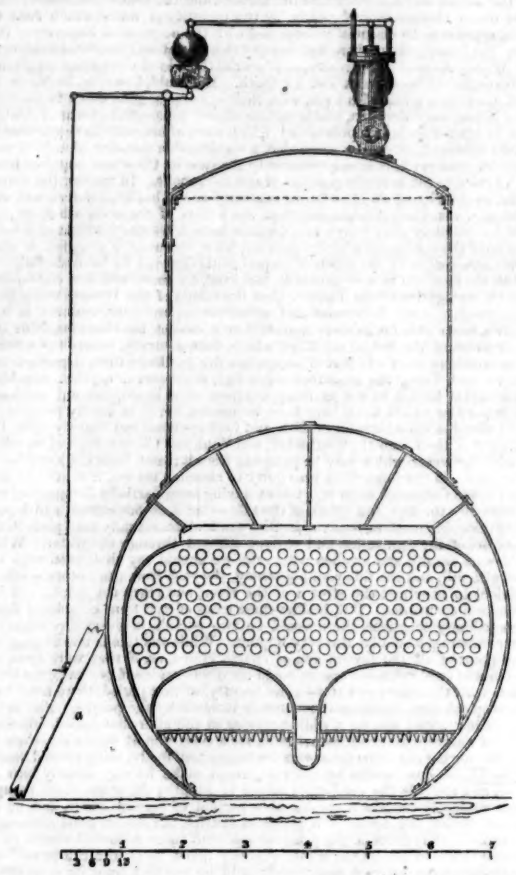
Professor Oliver Byrne, the eminent mathematician, has spent above three months with Professor Reinagle studying this unlimited power, and he defies any man to refute his assertion, that this air-power, as at present used, is boundless, and that the whole engine is so perfect as to allow of no material improvement, if any at all. Other eminent men have recently seen it, amongst them Dr. Armstrong, Dr. Carpue, and some distinguished foreigners, besides very many private friends of the inventor, of great intelligence, who have all expressed their candid opinion of its perfect simplicity, and of its immense power. The invention allows the use of air-condensers, of any length and width, up to 20,000, or 500,000, nay even 1,000,000, planted in squares, or in avenues, or clusters of circles. They would pass the air provided by them into numerous recipients, to be united as the branches of veins to the heart, so as to press into one huge receiver, or they can be prepared to use separately, as well as collectively, *at a moment's notice*. Let us suppose it is required to empty a water-choked mine, of any description, of its body of water. The common supposed contents ascertained, it may be deemed expedient to use a 10,000 or a 20,000 horse-power to do the task promptly. In such a case, forty, fifty, or sixty pairs of perpetual air-condensing providers would be used. The air within them is pressed upon with a load of 3 lbs. to every square inch; forty pairs will have a total pressure per second of 49,600 lbs., which per minute = 2,976,000 lbs. This condensed air is now rarified, by a peculiar and very simple contrivance, 700 deg. or times, its volume, but only in aliquot parts of minimum quantities, safe from all communication of heat to the main body. Our readers may from this be enabled to calculate what that augmented power resists and overcomes. To give it expression would, perhaps, under present circumstances, expose it to ridicule. We, therefore, for the present, omit the statement of this leviathan power. Professor Reinagle proposes to set this everlasting agent to pump the water from the mine by his improved cone and cylinder pumps, of great magnitude, which have already excited the utmost astonishment.

The engine, once set in motion, can be kept going, without expense, for years and years, save one or two men for a 20,000 horse-power, to work once every two hours for one minute, and no more, to re-set the air-condensers. To enable the public to form some notion of the power obtained, Professor Reinagle has contrived a table apparatus, anything but air-tight, and partaking in the air-moving vessel of the form used in the engine, by which he moves 80 lbs. full two feet, in three seconds (placed on a four-wheeled car) by his breath alone. Even 100 lbs. can be moved in like manner. Now, according to Bostock's *Elementary System of Physiology*, who, in vol. ii., page 34, when speaking of the lungs, states that, "assuming 170 cubic inches of air as the quantity which may be forcibly expelled, and that 120 will be still left in them, we shall have 290 cubic inches as the measure of the lungs in their natural or quiescent state." He then says, a few lines further on, "that rather more than two-thirds can be expelled by a forcible expiration." Two-thirds of 290 cubic inches is 192 and a fraction. Now these 192 cubic inches forcibly ejected, using such puff of air with this invention, drives 80 lbs. and upwards, on a four-wheeled car of small size, two feet in three seconds: that is equal to forty feet per minute. If the strongest man were to try the power of his lungs in moving the same car *alone*, by blowing through a tube against a surface at the end of a cylinder, six inches long and two inches wide, as if it were a piston, he would not be able to make it move an inch, the car weighing $3\frac{3}{4}$ lbs. But when this novel method is employed in blowing into a vessel conic in form, resting over a cylinder as a mere support and guide, as well as rest, using the model horizontally, the said model and weighted car being placed on a table or the floor, and blown into through a connecting tube only one quarter of an inch bore, and the receiver or propelling air-vessel being only three inches diameter at the base of the frustrum of the cone, and nine inches long, there is acquired, as above stated, the enormous power to propel above 80 lbs. a certain distance; but, as has been witnessed, above 100 lbs. can be propelled one foot distance in two seconds. The pair of air-condensers now raised in Professor Reinagle's drawing-room, made of wood, contain 27·216 cubic inches in each, which equals 54·432. 192 cubic inches, expressed from our lungs under such feeble compressive powers as the diaphragm and costal muscles, with the small closing of the ribs, is proved to be capable of moving upwards of 80 lbs. two feet in three seconds. The mere contents of the pair of air-condensers, being 284 times the expulsive capacity of our lungs, using no greater power, shows that 22,720 lbs. can be propelled two feet every three seconds. But when several atmospheres are at once let loose from the general receiver or heart, which in the case of the present existing engine would be twenty-three, a most enormous increase of power is obtained; in fact it is expected that, with the present small engine, 220 tons can be propelled at a rate of twenty-five to thirty miles per hour; because so many and *such certain expedients are at command* to augment the condensed air-power. More condensers, or greater pressure by increased weight, or by rarefaction, extend to an unbounded measure the propelling power at command. The total weight of the present engine, with all its appurtenances, does not exceed 7 *cwt.* Its cost, compared to a steam-engine of equal energy, is most trifling. All these advantages—united to an almost total absence of friction (there being no pistons) and no cost in the maintenance of the perpetual supply of air-power; little or no wear and tear; great simplicity of construction (few of the parts requiring nice workmanship)—must recommend it immediately for universal purposes, as one of the greatest economists ever yet introduced. It ought to be remarked that the force is only calculated for three seconds' duration; but, as the present power can be augmented for railway use by three or four pairs of air-condensers, such a leviathan motive power can be supplied, as would draw *all the carriages* which the Birmingham Company *possess, at once*, as two condensers and this engine will equal fourteen of the present locomotives, and go at a rate of thirty miles per hour, drawing, at the least, 420 tons. If the present horse-power locomotives do draw a train of 40 tons, at a rate of twenty-five to thirty miles per hour, then this engine, being fourteen times the power, should move at the same speed 560 tons.

THE LATE BOILER EXPLOSION.

We have throughout this very important inquiry narrowly watched the evidence adduced on the inquest of the sufferers, and intended to have offered some remarks arising out of the verdict, and the circumstances attending the case, but the trial of the inculpated engineer, Mr. Lowe, being expected to take place during next week, we feel any comments might be considered ill-timed at present. The Government, we understand, have, in deference to the recommendation of the jury and others, determined on conducting the prosecution.

SKETCH OF THE BOILER.



The boiler originally intended some eighteen months back for the *Waterman* steam-boat, No. 11, was constructed by Messrs. Fairbairn, of Millwall, according to the design of Mr. Alfred Milner, the engines of which are similar to those on board the *Prince Albert* (now the *Emerald*) and of the direct action class, with cylinders of 29 inches diameter. It was found incapable of generating sufficient steam, and was taken out, and a larger one constructed. This boiler, it seems, was afterwards sold to a person in Greenwich, from whom it was bought by the Messrs. Samuda; it was originally intended to work to a pressure of 15 lbs. on the square inch, or at farthest 18, and was proved by hydraulic pressure to 50 lbs. on the square inch, a pressure to an extent of nearly three times that which it was originally intended to work to with steam, and which is in accordance with the French law with regard to the proof of steam-boilers. In referring to the engraving, it will be observed that the boiler is cylindrical, its dimensions being 6 feet 6 inches in diameter, and 7 feet 10 inches long, the water spacing on each side $2\frac{1}{2}$ inches wide, the centre water spacing dividing the two furnaces 4 inches wide; the *fire* surface was about 44 square feet, and the number of tubes 182, which were $2\frac{1}{4}$ in. in diameter, and 5 feet $6\frac{3}{4}$ in. long, containing nearly 335 square feet of heating surface. The distance from centre to centre of each tube is 3 in., and the distance from the lower part of the tubes next the crown of the fire-surface 3 inches; the safety valve lever nearly 3 feet long, its fulcrum being 3 inches; diameter of valve $4\frac{2}{10}$; diameter of valve-box $5\frac{1}{10}$; length of rod, containing the weights $13\frac{1}{2}$ in.; secondary lever 2 feet long, fulcrum 5 inches, to the end of this lever is attached the rod, at the lower end of which was a handle, which handle was stated to be propped up by a nail driven in the piece of wood marked. The stays represented in the engraving extend from the crown of the smoke-box to the outer casing of the boiler, but there are no stays across the steam-chest; the plates of the boiler are $\frac{3}{8}$ in. thick; those of the steam-chest $\frac{5}{16}$ in.

THE PRESERVATION OF MINING RECORDS.—That the prolongation of the prosperity of this mighty empire is dependent upon the duration of our mineral supplies, is now too generally admitted to require an argument in its support. That an economical use of these inestimable resources must chiefly depend on accurate statistical information as to our mining operations, will be as little likely to be controverted. Upon these premises, therefore, we are now anxious to solicit the serious attention of the public to a matter of general interest and national importance, which has hitherto been much neglected. The application of skilful ingenuity and scientific research to the process of mining has done much; but the want of a registry of practical results has rendered speculations hazardous, which might otherwise have been judiciously avoided or prosecuted with a greater certainty of success. The waste of resources from misapplication is a national evil; but, when to this is superadded the fearful loss of life, which has ensued from frequent and various calamities in the mining districts, we feel certain that the subject will arrest the attention of the wise, and secure the sympathy of the humane. The registration of information, relative to the working of collieries, was urged with much force by Mr. Thomas, of Newcastle, towards the close of the last century; and the occurrence of a dreadful accident in 1815 recalled attention to the subject, and elicited some valuable suggestions by Mr. Chapman. On the formation of the British Association, Mr. Thomas Sopwith, an eminent engineer, earnestly brought the matter again under notice, and the establishment of the Mining Records Office, under the auspices of Government, was secured. This step did much in establishing a principle, but much remains to be done in rendering it practically useful. This, however, must depend on a legislative enactment, making such records compulsory, for without that little good can be effected; and, when we consider how great is the advantage to be obtained, how little the expense to be incurred, and how small the sacrifice to be made, we cannot but think that the matter is deserving of prompt attention and satisfactory adjustment. A regular, systematic, and permanent record of the mining operations of the three kingdoms, would prove of immense benefit to the present, and of incalculable advantage to future generations. Mr. Sopwith published, some time ago, a pamphlet full of useful information upon the subject, and the recent surveys in which he has been engaged in Belgium, throughout the valuable and extensive coal-fields in the Sambre and Meuse district, preparatory to the formation of that now sanctioned by the Belgian Government, have amply confirmed the necessity of preserving mining records generally.

CHILI—ITS MINERAL AND OTHER RESOURCES.—No. III.

Comparative Observations of the Mines of Mexico with those of Chili, relative to their qualities and their advantages, according to information furnished by Senor Don HILARIO PULINI, *Director-General of Public Works to the Republic of Chili, at present on a special commission in Europe.*

From the observations made by Senor Pulini in the Cordilleras of Chili, after an extensive practice, he states that the formation of the mountains that are metalliferous (which are called *caja*), are greatly distinguished by copper, gold, and silver ores; from the different researches made in various soils, always following into the Cordilleras the general direction of the axis of the chains of the rocks, and the disposition of the mines are invariably submitted to the same law. In this manner, in the different parts of Chili, are composed the granite rocks, or *cajas granitoïdes*—these are of the nature of the ancient rocks, or of the first formation; it is these that enclose the characterised auriferous veins, nearly the same as in the Brazils, by the quartz and iron; this formation also contains mines of copper, which are very numerous in Chili. There are to be met with also dominated by amphibolic porphyry and eurytes, that form themselves in some parts of the other steps of the chains or ridges; to the west these porphyries are in contact with a powerfully developed calcareous formation, which is nothing more than a chalky earth. The strata of these lands have at first a general inclination towards the east, they have also been raised by the porphyries, and follow, like them, the general direction of the chains; these strata afterwards follow each other closely in horizontal lines, but sloping towards the west; these slopes are caused by the re-appearance of porphyries and eurytes, which form a new belt that is salient, following always the general direction of the chains of mountains, which continue into the interior of the Cordilleras. The formation of the gangues contribute also in Chili to cause to be distinguished the different classes of the metalliferous beds. The quartz and amphibole are the most common gangues or mineral ores of copper; ferruginous quartz is that of gold; sulphate of baryte, carbonated spar, limestone, and carbonated baryte, are the only gangues in which the silver ore is generally contained. The two plans of contact of calcareous chalk with the porphyries which enclose them, and raise them thus to the east and west, are metalliferous plans; the first extend or confine themselves to within fifteen to twenty-five leagues (forty-five or seventy-five miles) from the sea; and in following in a same line along the coast, it has been traced for more than ninety leagues (270 miles English), from north to east, by Senor Pulini. It is particularly remarked, for several silver mines which exist in all that extent of country, this line of mines, which offers silver in a native state, mixed with pure quartz and metallised silver, it is only for about two years since they discovered this latter class, or formations of *gites* or veins. Its ley, or return, is 1500 mcs. per ton (the mare being 8 oz.), and I have seen a piece of silver metallic ore, that Senor Pulini has in his possession, as a sample, which is worthy of being examined for its formation, as its richness is even greater than above-mentioned. There is also found in others, amalgamated, or in a chloride state, that is separated from the mines of gold and copper, and the magnetic earth throughout the whole thickness of the porphyric formation, which is sterile.

The plan of contact of the calcareous with the eastern belt of the porphyries is marked by numerous veins of galena, of grey silverised copper, sulphureous, arsenical, and multiple argentiferous. Lastly, behind this second line of porphyries again re-appear the granite rocks, or *granitoïdes*, with a vein of ferruginous quartz and auriferous rocks, that are no longer covered by the great formation of trachytes and of recent volcanoes, the colossal masses of which are placed on the plain of these apex.

The ores of Chili consist of silver that is proper for amalgamation, chlorure of silver, native silver, bromure of silver, arsenical, mispickel, argentiferous and sulphureous, and divers multiple. These ores are dispersed along the Andes from 25 deg. south latitude, and the chains continuing to the south constantly, have presented, from the observations made by Senor Pulini, some particularity in their groupings. The richest are those that pass the third line, or step, of the chains; and the poorest are those, that from the interior of the chain project towards the coast of the Pacific—the most chloryded in the interior of the chain, and the most sulphureous at the exterior. The ley, or value, of the ore increases in proportion as one advances towards the interior, and finds silver disseminated in large masses, whilst those decrease towards the coast of the South Pacific. The chlorures of silver, which are the ores the most productive in Chili, present themselves generally under the form of grey earth, or ochreous—the first are called *pacos*, and the second *colorados*; these earths in outward appearance do not present any metalliferous qualities. In certain points, at 34 deg. south latitude, the *chlorure* isolates itself in small compact veins, or stalactite form, and presents itself on the surface in considerable quantity, mixed with native silver. The ley, or richness, of these ores is very changeable, they work the poorest, which only contain 6 mcs. of silver (of the value of 2*l.* sterling per marc) per ton, and they gain 1 mc. clear after all expenses; but the greater portion contains 16 mcs. per ton—the ores are considered rich, if of 80 mcs. per ton. The chlorures, the amalgamations, and the ores that contain the native silver, can be treated as the lowest.

The formation of its mountains is very elevated, from 6000 feet, and even some are as high as 9000 feet, and even 12,000 feet, and beyond the summits they are wide and flat; the inclination of its sides is from 50 deg. to 60 deg., which renders it necessary to have a narrow path, so as to render them practicable of access. The descent of these mountains is from 600 feet to 700 feet, and some parts from 900 feet to 1100 feet high in the interior of the chain, and they all form narrow valleys with very abundant rivers. These chains are traversed laterally from distance to distance in reforming other valleys more or less profound. The mineral mountains are generally known by a quality of strata of earth covered over with a sterile vegetation of a greenish-yellow, called *paniso*. This class of chains is the most abundant in metalliferous beds; nearly all these chains have these gites called *vetas*, or veins, they are vertical and oblique, and very little inclined towards the horizon; their direction is in every way, but it is observed that those veins are lighted by the rays of the rising sun in the east, which are the richest; those of the couchant, or the west, are the poorest; those in the south are not so rich as those in the east, but richer than those exposed to the north. The beds called *vetas reales* (royal veins) of gold and silver are of one foot in their shortest thickness, called *anchura*, and from four feet, six feet, and seven feet in its whole dimensions; those of copper extend from eight feet, to nine feet, and even twelve feet; those of lead from two feet to eight feet; and those of iron from eight feet, to twelve feet and eighteen feet. The ramifications of the little veins called *vetillas* are nearly all from four lines to two inches in thickness; it is generally noticed that in all the different classes of these veins and *vetillas*, that those which have their current opposite to the others are obliged to cut themselves in crossing at some point; these points of assemblage of the veins are very rich when the two crossing veins are very poor, and in the contrary sense if they are very poor, and the bed, or gite, very rich; the ramitos, or branches, and *vetillas* follow the same principle. It has also been remarked that the law, or richness, of minerals increases according as one advances towards the north, but the quantity decreases to such a degree, that this renders it only a flattering illusion, whilst the richness diminishing a little towards the south, is recompensed by the silver, which is found dispersed in the considerable masses gathered together here and there as a deposit in the same beds, which constitutes the richness of the veins.

[To be continued in next week's Mining Journal.]

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ON THE VENTILATION OF MINES, AND THE MEANS OF PREVENTING EXPLOSIONS FROM FIRE DAMP.

BY PROFESSOR FARADAY.*

(Continued from *The Mining Journal* of March 17).

Now, let us look at the effect of the goaf under certain circumstances. First of all, if it be no generator, it opens to one place where the fire damp is evolved —but we think it does evolve it. There is plenty of proof that the goaf is a very dangerous place; not many weeks after we came away an accident happened. A man put his candle up a cavity of a goaf, and said, "See, here is no damp here!" when an explosion immediately took place, and four men were killed—proving, very unfortunately for the men themselves, that the goaf is a very dangerous place. Whether the fire damp is evolved there or not, we cannot positively say; but if not, it is quite clear that any gas evolved in any part of the coal in excess will gradually creep into the goaf. There are certain mines, we were informed, which to this day are involved in this condition; although they ventilate carefully, as well as they can, all through the mine, still they are obliged to adopt regular periods for firing the residue of the mine —"firing off," as they call it, for the purpose of clearing away, by burning, the fire damp. Sometimes they are obliged to do this three times a-day, for the purpose of getting rid of the fire damp. Such gas as that, however, must always be dangerous. The goaf, therefore, is perpetually liable to be a reservoir of gas, even though it may not itself be a producer. If there be any gas in the goaves, it will be in the upper parts. If there be any cause which may increase the quantity of gas in the goaf, or lead to any further influx of it into the goaf, it will flow off at the upper part. There are some very extraordinary causes which tend to make the gas ascend. First of all, bear in mind what I told you before of the manner in which the men proceed in working the mine, taking away pillar after pillar, and then at last drawing the juds. Imagine a pillar here—he props the roof up, takes away the pillar, and so converts it into a jud; at last he withdraws the jud, and then what happens? Part of the roof falls down, and extends the goaf. But mark the consequence; it will not merely have made the goaf larger by spreading the basin yet more, but the edge of the basin becomes a little higher. Now, supposing a goaf of thirteen acres to be full of gas, or an explosive mixture, down to a certain level, that the ventilation had carried off all the gas up to that point. This breaking in of the goaf has the effect at once of altering the level one foot. Throughout the whole extent of that goaf a stratum of air in the interstices would pass off one foot in depth, flowing out at that one place. The whole of the adjustment of the aerial strata in that goaf would be altered in that manner, just as though if you were to break off one foot of the edge of a pond of water, you would let out one foot of its depth. This is a very serious matter. We are not speaking of daily occurrences, but of those rare cases—and rare, indeed, they ought to be—which caused the death of ninety-five men upon one occasion. It is the origin of these rare events we are inquiring into; nobody thinks them to be of consequence, because they are so unfrequent. It is a matter of the utmost difficulty to induce parties engaged in these pursuits to take the proper precautions. The interests both of the proprietors and the men themselves always tend to make them regardless of these dangers. The more coal they raise from the mine the more money they obtain; and the pecuniary interest of all parties evidently is to urge the working forward. There is no doubt that the effect of all the precautions which have been suggested against accidents are, to a certain extent, great inconveniencies in the working of the mine. It is certainly not a pleasant thing for a man to work by a light put into such a thing as the safety lamp, which is a kind of cage, and it is no wonder that every now and then he is tempted, no doubt unwisely, to work with it open at the risk of his life. The danger they suppose to be so very remote. It is true a man goes down the pit a thousand times, and works without accident, but on the next occasion he is killed. There is, however, one other point which I must notice, and that an extraordinary one—viz., the effect of the pressure of the atmosphere; this is a very curious thing. The philosophy is very well known to scientific men, though not generally understood. In fact, mines are not matters of every day observation; they are not in thoroughfares, but in remote corners out of the way, and not subject to the scrutiny of all persons going by; therefore, the information about them is vague, meagre, and contradictory in the extreme—so that, in fact, you may prove anything from it, and support any notion about mines to your own satisfaction. It is easy to obtain evidence of any sort—that the goaf is safe, or that it is very dangerous; that they work with candles, or use the Davy lamp. We have had such various accounts written to us that we could not trust to them; not through any ill-meaning or desire to deceive, but because the circumstances are not open to continual surveillance. I do not make this statement in exculpation or inculpation of any one; but it arises from the natural condition of the place in which those only who suffer are in the habit of going in and out, and in which others cannot go to remark, correct, and observe differently. With regard to the effect of the pressure of the atmosphere, I would observe that our atmosphere varies in weight; it will vary as much as three inches in the common mercury in the barometer, fluctuating from twenty-eight to thirty-one inches in its weight; it often happens in a single day that it will drop one inch, falling from thirty to twenty-nine. What do you think would occur in a goaf of that size, a small one, if the barometer descended to that extent in one day? The enormous quantity of air in the goaf, equal to the bulk of coal taken out, would expand, and occupy a larger space; then, of course, it would overflow at the upper edge of the goaf, in proportion to the fall of the barometer; the gas becomes squeezed by the superincumbent atmosphere into every crack; it retreats into the solid coal itself, into the cells of the coal, the blowers all cease in some degree, or diminish in action; the air in the goaf retreats up, and takes a smaller space, fresh air is poured down the shaft, because the pressure of the atmosphere above is greater. When the barometer is rising, the men are comparatively safe, because the enemy is retreating from them, but when it falls, all this explosive matter comes forth into the mine from the goaf; then, of course, when the barometer falls, there is an overflow, or rather an underflow, of gas from the goaf into the workings of the mine, making it explosive. Even the men themselves do not know anything of this fact. We inquired at Haswell whether there was a barometer in the workings of the mine, and were told that there was one in the office, but they had no notion of having a barometer at the pit's mouth. The men are not sufficiently instructed to be aware of the importance of these things. I will make an experiment to show you how this acts by taking a porous substance, and exhausting the atmosphere from it. I am using only a piece of charcoal, which is a bad thing, because it is by no means sufficiently porous. If I increase the pressure of the atmosphere, I expect you will soon see the gas, or fire-damp, creeping out of the cavities of the charcoal. You will now perceive it rushing out of all these cavities, even with a very moderate diminution of pressure of the atmosphere, and under very unfavourable circumstances as compared with the enormous cavities in the mine. You see it does come out and overflow. (The lecturer showed this by suspending the charcoal in water under the receiver of an air-pump). Once in a thousand days, or any other time, a period would come round in which this space would serve as a receptacle for fire-damp, being full of the explosive mixture which comes forth when the barometer falls. When these ninety-five men were killed, it was actually by the drawing of a jud; it was at the very edge of the jud. It was in a mine well ventilated, and free from gas as mines go. The underviewer actually declared that he never saw any gas in it in his life. The gas, however, was found by others. They were drawing that jud at the time of the accident; whether the jud, or stones, had broken the Davy lamp, and so set fire to the gas, we cannot tell. We saw some lamps at the very place; but yet we cannot tell accurately how it occurred. All we know is that they were enlarging the edge of the goaf in that part when the accident took place. Whether there was an overflow when the explosion took place, we cannot tell. Another explosion took place. Some of the men were choked; others were choked and burnt; but they were all killed by suffocation, so that there were two causes. Without saying whether this was or was not the cause, we venture to think that the ventilation of the goaf should be attended to by itself, apart from the rest of the mine. We were not fitting judges of the fact, as to whether the mine was or not sufficiently ventilated; those who are qualified to give an opinion on the matter, say that it was. But as regards the goaf, we venture to say that was not ventilated enough: it was a very feeble current of air, not carried forward to the extent to which it ought to have been in a mine, where there is a liability to the action of fire-damp. The safety of the miners hangs upon a change in the barometer, a sudden increase of gas in the mine, and various other circumstances. Wishing to make our examination as quietly as possible, and to have our report as complete as we could, we proposed upon general principles the following plan for the prevention of these sad calamities. That a pipe should be laid from the goaf into the upcast shaft, or into what is called the return way, and either by a draft, or some mechanical means, to draw off the air from the goaf. That the pipe shall be thrust up into the goaf, then carried to the upcast shaft, and exhausted by machinery. (The lecturer showed an arrangement suitable for this purpose). Now my notion was, without any mechanical means, merely by the draft of the upcast shaft, if connected with the goaf, that such an arrangement would be sufficient to ventilate the goaf. I am going to show you that that draft is sufficient to ventilate the goaf; that is to say, that the principles are sound, whatever the practice may be found to be in a coal-mine. Here is a pipe entering the chimney; it has been inserted very carelessly, I have carried off this pipe a certain distance. Part of it I have made of glass, the reason for which you will see by-and-by. Another portion of water-proof cloth carried out at the further end, at which place there is such a draft that you can hardly keep a candle lighted there. I dare say, if Mr. Anderson takes a candle there, you will see it almost or quite blown out. (Mr. Anderson held a candle at the end of the pipe, the light of which was nearly extinguished by the draft). It is just that kind of draft which I propose to use in the removal of the gas from the goaf. That is what we call the return way, and this is the upcast shaft: not that I mean to say that the return in the mine is all air, because such is not the case. Our proposition is to have in such return way a pipe laid down purposely to proceed to the goaf. But I must show you how it is such a small fire creates so great a draft. The velocity of the air in the mine is measured by smoke from the explosion of a little gunpowder; and I will imitate their process for the same purpose; the draft which I have here, being of course very small, compared with that which exists in the mine, although about in the same proportion to theirs. They have two fires in the upcast; and they informed me that there was half-a-ton of coals on each. These fires are always kept up, so that there is continually a ton of coals in combustion in them. You may imagine from that fact, how great the draft must be. Mr. Anderson will now fire a little gunpowder at the other end, which will enable you to judge of the velocity of the draft. (This was done, and the passage of the smoke could be seen through the glass.)

[To be concluded in next week's Journal.]

* A Lecture delivered at the Royal Institution, London, January 17, 1845.—From the *Repository of Patent Inventions.*

SUPPLY OF PURE WATER TO THE METROPOLIS AND ITS SUBURBS—PROPOSED NEW COMPANY.—No. VII.

On the subject of water taken up from the river Thames, within certain limits, included in what may be termed the London district, the very circumstance of animal and vegetable matter of various descriptions, that used to be collected and removed for the purposes of manure, now indiscriminately washed into the sewers and conveyed into the Thames, and the sewers themselves rendered much cleaner than formerly by the quantity of water which runs to waste, appears to be essentially connected with the augmented impurity of the river. The broad principle here laid down by this allegation, goes, as the readers of *The Mining Journal* will perceive, to affect the three local companies supplying the boroughs of Southwark and Lambeth. It should, however, be borne in mind, that these companies have, with their eyes open, gone down to the nuisance in that very direction, where various offensive manufactories unavoidably must be carried on in a populous city, which must of necessity have a tendency to hold dissolved, as well as suspended, a considerable quantity of animal and vegetable matter; this is unquestionably the case in the water supplied from the Thames to the southern portions of the metropolis. In tracing the source of the insalubrity of an element, so necessary to the health, comfort, and enjoyment of mankind, it is obvious that the waters of the river are more polluted immediately after heavy rains, which force down the contents of sewers, than after the continuance of dry weather, when its course is sluggish, or altogether arrested; and the result of experiments directed to be made fully establish the fact. It is also generally admitted, by those who are conversant with the navigation of the Thames, that the ullage of the Thames water is in a progressive state of increase and offensiveness, and men, eminent in hydraulics, have given it as their opinion that it cannot be otherwise, from the construction of the bed of the river, which, from a survey, consists of a series of excavations, from which it is impossible the feculence there deposited can escape; such being the incontrovertible fact, it appears to us, that supposing the sewers to be full as it is in rainy weather, when it empties out suddenly the impurities which have long been accumulating, it is hardly possible to doubt that the whole stream of filth and foulness must run directly upon the dolphins* of the Lambeth, Southwark, and Vauxhall Companies, and be taken up with the water which may be pumping from it; and, from the situation of their works, in the immediate proximity to common sewers, it is evident that much crude filth must enter it, without having been partially decomposed and deposited by the flux and reflux of the tide—that a decomposition and deposit of objectionable matters, received in their crude state, actually take place in the reservoirs of the companies, and remain diffused through the water. When the sewers are full and swollen with rain, we should say that, even with the river also full, and the tide running strong, the rush from the sewers would be sufficient to penetrate the stream of the river, and reach the dolphins of the three local companies. But, besides these cases of evil from occasional floods upon ordinary occasions, there would be two periods in every day when the water taken up would be also very impure. While the tide is flooding up, the flood-gates of all the sewers are, of course, closed, or, if they were open, the contents of most offensive matter could not discharge itself, but be forced backwards with the entering water—consequently, at that period, there must be a less proportion of excrementitious matter received by the pumps. But, at the time of low water, and for a while previous to and after that period, when the body of water in the river is small, and, for a time, almost stationary, then the stream pouring out from the sewers discharge itself freely, being carried neither upwards nor downwards by any tide, would make its way directly into the river, and towards the companies source of supply; the water there pumped must obviously contain a considerable portion of human odour, and, as the sewers receive the refuse of a populous district, the stream must necessarily be copious; the effects of the poisoned sediment there deposited would go far beyond this, and almost the whole quantity taken up at the companies' dolphins during the interval mentioned would be pumped from its contents, as may be seen every day by any person who will devote their attention to the inspection of the operation, and what applies to one sewer is equally applicable to the discharge from the 150 great sewers, for the space of an hour or two before and after low water, when the small quantity of the water contained in the river is daily charged with the contents of these sewers.

The river Thames, as a source for the supply of this necessary element of life, we protest, and that too of making excavations and filtering beds, to attempt to amend their supply, by having recourse to the cleansing and clarifying system. No man, who has witnessed the contiguity of these companies' dolphins to the frightful common sewers, which pours into the Thames the accumulated filth of half a million of inhabitants, located in the populous districts south of the Thames—to say nothing of the refuse of colour, lead, gas, soap-works, drug mills, and manufactories of various descriptions—can believe, although the filter may remove the particles of filth in suspension, that such water can be restored to its purity of taste, or rendered fit to be constantly employed in the preparation of our daily food, and other domestic purposes. Without expatiating further on the particular locality from whence the Lambeth, Southwark, and Vauxhall Companies take their supplies, we may observe, that by a peculair infelicitousness in the arrangements of these companies, their dolphins stand direct and immediate in the midst of sinks and drainage. We leave it to the judgment of those who partake daily of this poisoned fluid, and submit, that water drawn from a source impregnated with the soilage of a great city, is a just cause of complaint; and reason, why the supply of water to the habitations of the rapidly-increasing population south of London, ought to be derived from other sources than those now resorted to, as shall at all times insure its sufficiency, cleanliness, and purity, as well as at a moderate and permanent rate. The question of the river Thames as a source of supply, and of the purity of its waters, has been placed on an erroneous footing by many, who say, that there is no ingredient in the water supplied to the metropolis to produce disease, and that chemical analyzation detects nothing deleterious in the mixture. We may observe, that experience will support us in the fact, that we shall look in vain for any argument to controvert the evidence of Dr. Bostock, and other men eminently qualified for the task, during the late Mr. Thomas Telford's inquiry on supply of water to the metropolis, that the waters of the river Thames contiguous to, or in the neighbourhood of London, was loaded with extraneous matter of a poisonous nature, most destructive to health, and improper to be employed for diet and various other domestic purposes. We previously adverted to the subject [see *Mining Journals* of 23rd November and 14th December, 1844], and entered fully into the whole question, and as the pretension urged is utterly untenantable, it will be only necessary to aver that such sophism is mere assertion—such reasoning would equally apply to water taken from a common sewer or a water-closet. The very supposition of impurity is, in our opinion, sufficient ground for rejecting water that flows from a foul source—proximity to common sewers, or contaminated by having putrid and vegetable matters in contact with it. For argument sake, let it be admitted that the Thames water is free from the general insalubrity; the vendors of this spurious article of consumption attribute to it, that it is not deleterious to health. Is there nothing to be said on the advantages of comfort and cleanliness? Is there nothing disgusting to the sight, or offensive to the senses, in the use of water, impregnated with the evacuations and ablutions of a population of two millions, and many thousand animals, congregated in this great city? Even after this "improved" water has deposited its particles of filth, by means of reservoirs, or cleansed by the filter, has it not an inevitable tendency to lower our notions of decency—to reduce us to an uncivilised race—to sink the public mind into a filthy and disgusting habit of tolerating any kind of abomination that could, by any means, be infused into, or brought into connection with, the water of the metropolis? The effects of cleanliness are immense, and the want of pure water for such an assistant to the elevation of this virtue, cleanliness, is abundantly manifest, for we can neither live nor preserve our bodies sound and healthy without it; for it guards us against every disease, protects and defends our bodies from all kinds of corruption. "The different nations of the world are as much distinguished," observes Mr. Addison, "by their cleanliness, as by their arts and sciences, the more they consult this virtue." Dr. Forsyth says, that "cleanliness is a subject, the nature of which must be obvious to every mind capable of the least reflection, whether estimated in a medical or moral point of view; cleanliness in person, and in all concerned with it, is a principal duty of man." "I recommend," says Dr. Adair, "as a habit conducive to general health, the washing of the whole head every morning, on first rising, with cold water; children should be encouraged to dip their face into a basin of cold water, keeping their mouth and eyes open, until they require a fresh breath, and repeat this thrice every morning. This practice strengthens the eyes and gums, preserve the teeth, and acts in some measure as a cold bath, by sympathy on the whole body." Here is sufficient testimony to the value and salutary effects of cleanliness upon the moral, as well as physical, man. When we contemplate the filthy and deleterious fluid pumped up at the rate of 6,000,000 gallons per diem, into the habitations of half a million inhabitants, residing south of that river, from whence they draw the supply for their domestic use, we may indeed exclaim, "*O tempore! O mores!*" for resolute must be that man, bolder still that child, who, in these days of refinement, and in a metropolis whose inhabitants pride themselves on delicacy and cleanliness, "screw their courage up to the sticking point," to bathe in a fluid offensive to the smell, and in communication with the sinks and drainage, daily disgorging every species of filth—much less to plunge his head and face, "keeping his mouth and eyes open"—in a water, which, though it may have passed the filtration, thereby its mechanical impurities skimmed away, still holds all its noxious particles in chemical solution, which has been declared by eminent professional men to be a filthy fluid, "loaded with decayed animal and vegetable matters, and other substances, equally deleterious to health, and unfit for domestic purposes." There are persons who maintain, also, that the impurities of the Thames are all carried away, and swept into the ocean with every ebb of the tide. We repudiate the fallacy of this notion, and aver that it is not in the power of any company—let its resources, its management, its skill, its intelligence, and its disposition, be what they might—to supply salubrious water from the polluted source of the river Thames. The contents of sewers, and the mass of other filth, with which the river was loaded, were said by Mr. Mills, an eminent engineer, "carried about thirty miles by every tide. The same water came back by the flood, and thus, let the supply of London be taken how it might, if it was not derived out of the reach of this flux and reflux of filth, it would, of necessity, be impure; if the filth emptied into the Thames at the ebb were not brought back by the flood, it was evident that we should have salt water in London." Another error has obtained active circulation, and gained some degree of popularity, proceeding, apparently, from persons ignorant of the question, whose credulity in the marvellous would impose on their minds the belief, that the British Empire are indebted to the quality of the Thames water for its far-famed London porter; the fact, however, is, that the water of the Thames is not employed in the manufacture of this much-used beverage; in this conviction we are supported by the most eminent brewers, seeing that Messrs. Buxton, Barclay, Calvert, Whitbread, and others, have, at vast expense, sunk wells of immense depth and magnitude, thereby avoided the turbid and deleterious qualities of the Thames water, and obtained an abundant supply of pure, soft, and salubrious water, and removed, also, the evils of an odious and tyrannical monopoly, to which they were compelled to submit, based, as it was, upon impolicy and injustice. We can, evidently, trace the prevalence of this error to the fervid imagination of a knot of jobbers, intrusted in the sale of this filthy and unsound fluid. The circumstances attending the local companies, of deriving their supply from, and pumping daily into, the houses of their consumers for domestic use, the polluted Thames water, renders it necessary that they should resort to this specious argument; futile though it may be, it can only be equalled by the absurdity of an assertion of the almost exploded doctrine, that the Thames possesses power of self-purification, not possessed by that of any other river. The nonchalance with which the agent of these water schemers tell their story, will, we think, strike the public with astonishment; in an era, distinguished for improvements conducing to domestic comfort and social convenience, that the vendors of fœtid water should attempt to make us believe, in the nineteenth century, and in a metropolis, the centre of wealth and civilization, that, in the course of a long voyage, it will, after a few months' agitation on the ocean, "work and ferment like liquor, and become fine;" and hence it is logically concluded that the water taken up in a stream, which receives the suilage of a great city, will, by making a short voyage, or remaining stagnant in reservoirs, in like manner ferment and become fine. We have yet to learn that water of any river, if equally loaded with animal and vegetable substances, as the Thames, would purge itself, subjected to this operation. In its deleterious qualities and excessive impurities must we look for the explanation of the above phenomenon; in the solution of that problem is involved the health, nay, even the lives, of future generations. "No water carried to sea," says Dr. Trotter, "becomes sooner putrid; when a cask is opened, after being kept a month or two, a quantity of inflammable air escapes, and the water is so black and offensive, as scarcely to be borne; upon racking it off into large earthen vessels, and exposing it to the air, it gradually deposits a quantity of black slimy mud." Mr. Newton says, "In a still of five and twenty or thirty gallons, the first three gallons should be thrown away, because the water taken up from the Thames at London is charged with so much septic matter, that the fluid which first runs off in distilling will not keep many days; three or four gallons must likewise be left at the bottom of the still, on account of the residuum of filth which they contain." If such was the deleterious qualities and foul condition of the river Thames at that time, it must inevitably be so at a period, with a population increasing with marvellous and unprecedented rapidity, and a power of manufacturing production increasing faster still; this being the case, it is in the nature of circumstances, that if the enormous mass of pollution and corruption, which formerly was taken away in waggons, and distributed over the land as manure, is now conveyed into the Thames through the common sewers, the water taken up near the mouth of the drainage of the metropolis, cannot be otherwise than a filthy fluid, destructive to health, and unfit for domestic purposes. How criminal, then, must those persons be, who confederate, not only to create a mischievous and an unprincipled monopoly, but dare to sport in this way with the lives of their fellow-creatures—to vend an element of Nature, and indispensable necessary of life, impregnated with the suilage of a population, congregated in the most densely-peopled city in Europe. The question appears to us to be—"Which is the best supply that can, by possibility, be obtained for the public?" not "which is the worst that the human constitution can bear, without producing any actual disease?" The Lambeth, Southwark, and Vauxhall Companies, at the period of their incorporation, engaged to supply the inhabitants of their districts with "pure and wholesome water" from the Thames; such water is not to be obtained in that direction, seeing that the vast accumulations from this populous town, which the common sewers receive, and so copiously empty their poisoned sediment into the Thames, is calculated, not only to deteriorate the waters of that river, but to prejudice the public health. The plan to make the Thames the refuge of all manner of offensive matter, is quite enough to raise fears for the health of those who drink of water subject to such pollution—an objection which certainly is in itself sufficient why the supply of water to the metropolis ought not any longer to be taken up from so foul and poisonous a source as the river Thames. We have now presented the public with but a faint picture of the river Thames for supplying the metropolis with so-called pure water. We anticipate that the preceding allegations, with the facts adduced, together with the observations necessary, in illustration of the series of papers which have appeared in *The Mining Journal* for the developement of this inquiry, will prove, however, how intimately the health of populous districts are bound up with the supply of this great exuberance of Nature in a salubrious state, and at a moderate and permanent rate; and, also, that the inhabitants south of London are oppressed with a grievous and mischievous monopoly, and supplied with water in a state offensive to the sight, disgusting to the imagination, and deleterious to health; that the discovery of the polluted source from whence the water flows into their houses, has filled their minds with just alarm, which has become so serious of late years, as to excite apprehensions for their health, and we submit that, unless the authorities of the land interpose to crush this simultaneous confederacy, vending an article of consumption, so necessary for human subsistence as water, in a filthy and deleterious state, some fatal epidemic may fairly be anticipated in districts, with the rapidly-increasing population, as those of the southern portions of the metropolis.

We have now developed our views, and disposed of five heads of our allegations, and clearly demonstrated, that the quality of the water supplied to the southern districts, by the Lambeth, Southwark, and Vauxhall Companies, is impure and unfit for domestic purposes; and that the purity of this element is essential to the health and comfort of this populous city.

* Name given by water companies to the small wooden erections which they place in the river to inclose, and to indicate the source, or head, from which, by means of a steam-engine, their supply is obtained.

RAILWAY SPECULATION—*(From a Correspondent).*—Let any one look at the state of railway speculation in the present day, and cast his memory back about twelve years, and then predict what will be our condition in as many years hence. Then, no one but a few desperate enterprisers would touch the dangerous scheme—now one hundred millions is invested in these selfsame projects. Not one of them could ever pay—premiums varying from 4 to 10 per cent. are now universally allotted. They were deemed too insignificant for Parliamentary notice—at present a Government Board of Trade is specially nominated to discuss their features—the Legislature is inundated with bills for railway projects—whole nights are spent in debate upon railway enactments—and one and all of its honourable members, having themselves deemed it not unworthy to speculate in the schemes, are in fevered anxiety as to their respective lines. Bankers then designated the companies as frauds—counsel termed them "bubbles"—respectable brokers pronounced them disreputable gamblings—and cautious capitalists declined to sink their money in such uncertain funds. Now, bankers speculate largely—brokers dabble deeply—the wariest capitalists, finding a good return for their money, invest their all in these "dangerous transactions"—and counsel, finding both traffic on the rails, and fees in their pockets, beginning to increase, pronounce them the very safest and most advantageous medium of investment—and, finally, the Parliament which some dozen years ago laughed at the idea of "railway travelling," and affected to regard the project with discountenance and distrust, when these same phantasies began to thrive, when revived commerce flowed to their lines, and filled their despised coffers, thought fit to tax them. Such are the miscalculations of the shrewd, and such the changes effected within a few years, by the courage and foresight, and enterprise, of a few. Again we ask—Who will say what may be our condition in twelve years hence?

RAILWAY IRON.—A contract was entered into in this town, on Saturday, for 21,000 tons of rails, at the price of 12*l.* a ton. They are to be delivered at the rate of 1000 tons monthly, beginning in October. The broker's commission in the transaction amounted to 240*l.* The purchase is made by a Glasgow house.—*Liverpool Times.*